

POWERLINE EGSA

The Voice of the On-Site Power Generating Industry

Ready for Prime Time:

CHP Looks Better than Ever to a Growing List of Energy Consumers

Plus: Tier 4 Alternatives for Stationary Engines

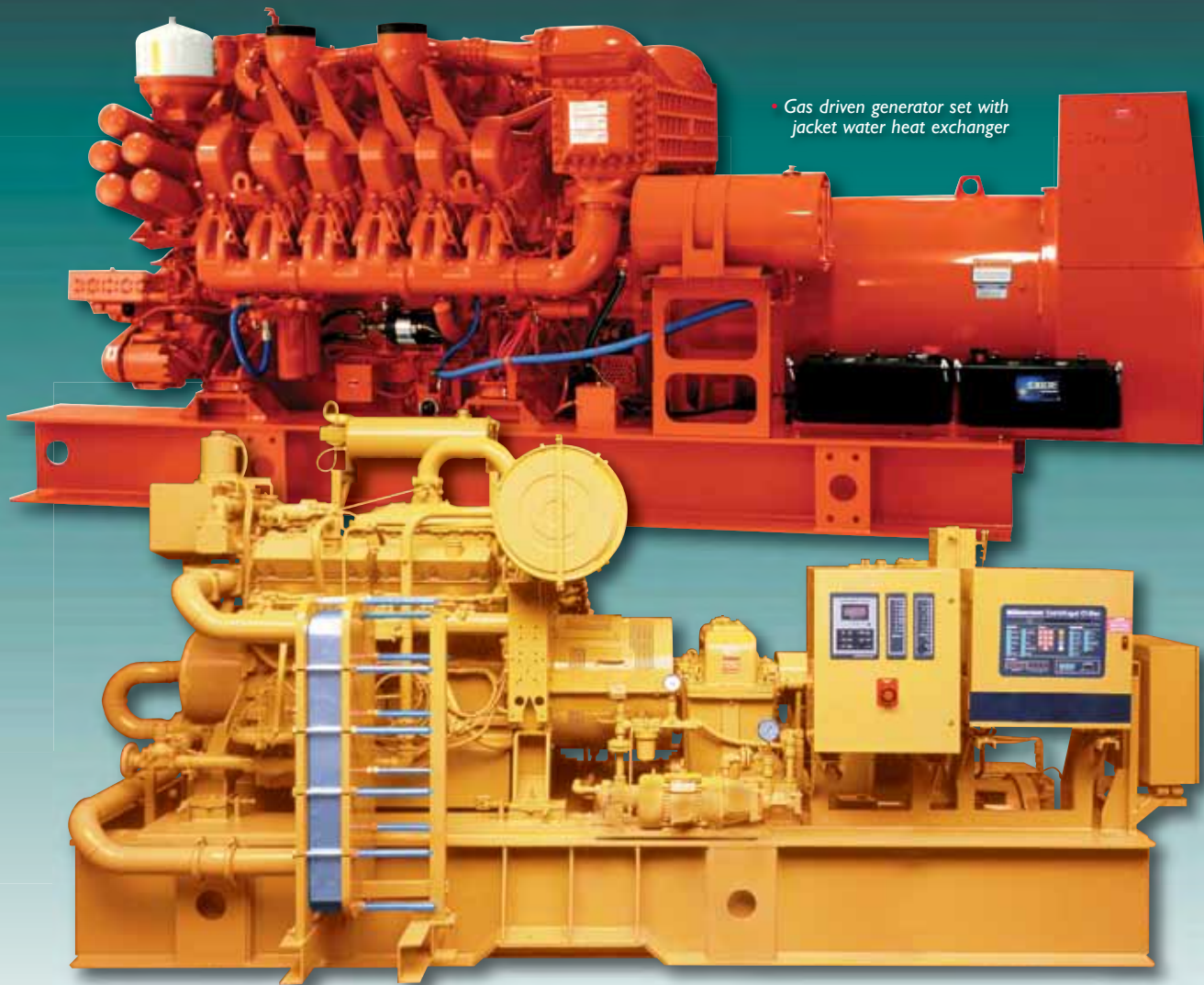
**Emissions and Silencing for On-Site Power –
Exhaust System Integration Continues**

Case Study: Critical Protection: Data Center

Chillicothe Metal Co., Inc. Member Profile

Recognizing EGSA Talent...Tracking Valuable Member Contributions





• Gas driven generator set with jacket water heat exchanger

• Engine driven chiller with jacket water and after cooler heat exchangers

COGENERATION SOLUTIONS

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CONTENTS

Volume 48, No. 2 • March/April 2013

Columns

| | |
|-----------------------------------|----|
| From the Top | 7 |
| Planning EGSA's Future | |
| Education | 8 |
| Education & Certification Updates | |
| Codes & Standards | 10 |

Features

| | |
|--|----|
| Ready for Prime Time: CHP Looks Better than Ever to a Growing List of Energy Consumers. | 13 |
| Tier 4 Alternatives for Stationary Engines: Practical Solutions that Don't Break the Bank | 18 |
| Recognizing EGSA Talent... Tracking Valuable Member Contributions | 22 |
| Emissions and Silencing for On-Site Power – Exhaust System Integration Continues. | 27 |
| Chillicothe Metal Co., Inc. Member Profile | 30 |
| Another in our series of EGSA Member company profiles. | |
| Case Study: Critical Protection: Data Center | 39 |

Departments

| | |
|---|----|
| Events Calendar | 5 |
| Association and Industry events. | |
| Index of Advertisers | 6 |
| Who's Who in this issue of <i>Powerline</i> . | |
| Association News | 25 |
| Updates from EGSA. | |
| EGSA Membership Application | 33 |
| It pays to be a Member of EGSA. Join now! | |
| EGSA New Members | 35 |
| Who has joined EGSA in the past few months? | |
| Job Bank | 36 |
| Looking for a new job? | |
| Industry News. | 41 |
| The latest reports. | |



On the Cover:
Ready for Prime Time:
CHP Looks Better than Ever to a Growing
List of Energy Consumers;
Page 13



Tier 4 Alternatives for Stationary Engines:
Practical Solutions that Don't Break the Bank;
Page 18

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Industry Trade Shows

POWER-GEN International 2013

NOVEMBER 12-14, 2013; Orlando, FL

The world's largest show for power generation, featuring the EGSA On-Site Power Pavilion. For exhibit information, contact EGSA at (561) 750-5575, ext 205 or e-mail Jalane Kellough at J.Kellough@EGSA.org.

Conferences & Conventions

EGSA 2013 Fall Technical & Marketing Conference

September 15-17, 2013; Seattle (Bellevue), WA

The Fall Technical and Marketing Conference is held during September and is designed to focus on technical and marketing issues. Registration information will be available online at www.EGSA.org or call (561) 750-5575.

NFMT Conference & Expo

March 4-6, 2014; Baltimore, MD

The country's #1 conference and exposition for non-residential building owners; facility managers; maintenance engineers; directors of sustainability; planning; operations and management. EGSA has partnered with NFMT to launch the Power Source Pavilion. The Power Source Pavilion and educational sessions will provide facility professionals with exclusive access to on-site power solutions. For exhibit information, contact EGSA at (561) 750-5575, ext 203 or e-mail Kim Giles at K.Giles@EGSA.org.

EGSA 2014 Spring Convention

March 23-25, 2014; Savannah, GA

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ADVERTISERS INDEX

| | |
|--|----|
| Altronic, LLC (GTI Bi-Fuel) | 4 |
| Anna, Inc. | 21 |
| ASCO Power Technologies | 44 |
| Diesel Gas & Turbine Publications | 36 |
| Enercon Engineering, Inc. | 2 |
| Flight Systems | 12 |
| Floscan | 38 |
| FW Murphy | 17 |
| Generator Solutions, Inc. | 38 |
| Governors America Corp. | 24 |
| Hennig Enclosure Systems | 12 |
| Hilliard Corp. | 28 |
| MIRATECH | 28 |
| MTS Power Products | 43 |
| OMNIMETRIX | 26 |
| Phoenix Products | 40 |
| Power-Tronics | 24 |
| Pritchard Brown | 24 |
| Robinson Custom Enclosures | 38 |
| Ruselectric, Inc. | 11 |
| Safety Power | 21 |
| Showmen Supplies Inc. | 12 |
| United Alloy, Inc. | 9 |
| Universal Acoustic & Emission Technolgy. | 5 |

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Planning EGSA's Future

One of the key responsibilities of a non-profit board of directors is to set the strategy for the organization. Several years ago, EGSA President, Gary Kidwell tasked us with developing a strategic plan for EGSA. When he asked me to lead the effort, I have to admit I didn't know very much about strategic planning. As you can imagine, there was a bit of a learning curve involved! Thankfully, we put together a great committee to work through the process.

Below are the strategic planning benefits we identified as a committee:

1. Clearly define the purpose of EGSA and establish realistic goals and objectives consistent with our mission.
2. Communicate goals and objectives to the organization's constituents.
3. Build consensus in the direction of EGSA.
4. Help us ensure that day-to-day decisions, whether made at the board or committee level, fit in with the long term interests of EGSA.
5. Ensure the most effective use of our time and resources by focusing on key priorities.
6. Provide a base from which progress can be measured.

Our strategic plan is made up of the following components:

- SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats)
- Vision
- Mission Statement
- Core Values
- Association Goals
- Key Strategies

Since the plan was introduced, we've made excellent progress in several key areas.

Marketing:

One of our key strategies was to market EGSA. As we discussed different areas of focus, marketing was a recurring theme. Marketing was highlighted as being critical to our growth, both for specific programs such as Technician Certification, and our entire organization. After careful consideration, the Board of Directors approved the addition of a Marketing Manager to our EGSA Staff. We've seen the positive impact of this change throughout EGSA. Kim Giles is a great addition to the talents of our EGSA staff, and has made significant contributions to our convention pro-

grams, technician certification and the marketing of our organization.

Membership:

When we introduced the plan in 2010, membership was growing at 4% per annum. One of our key strategies was to grow membership at the rate of 8%. This was an aggressive increase! Thanks to efforts such as the Hafich Challenge, our membership is currently growing at 6% per annum. We hope to reach 1,000 members in 2014. That's quite a milestone for us to reach, and will be cause for celebration.

Committees:

As you know, much of the work within EGSA happens in our committees. When we introduced the strategic plan to our members, we asked committees to take the plan to the next level. Each of our committees developed a set of initiatives to help us reach our goals. Those initiatives are written to be SMARTER – specific, measurable/quantifiable, achievable, realistic, time-targeted, extending (they should challenge the organization), and rewarding. With only two conventions a year, there is a limited amount of time to accomplish our tasks. Having documented initiatives helps committees to focus their efforts to accomplish as much as possible, and allows for easy follow-up as needed between conventions.

Technician Certification:

At the end of 2012, we had 741 EGSA certified technicians. Our goal under the strategic plan is to grow the program by 50% a year through 2015. This goal was also very aggressive, but we thought it was important to grow the program quickly. In the last two years, we've seen over 40% growth per annum in the number of certified technicians. While we're shy of our 50% goal, we're making good progress. Read what's happening with the program in Bob Breese's education update featured in every issue of Powerline.

One of the keys to the success of our strategic plan is treating it as a living document. Over the next several months, the Strategic Planning Committee will be working to put a structure and processes in place to review the plan on a regular basis, as well as measure our progress against the plan. Watch for updates this fall. In the meantime, continue your contributions through our committees. It's all of us working together that will build a stronger EGSA for the future. ■



Bob Breese
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Education & Certification Updates

Education Update

Six Schools are being offered again this year. The first Advanced School, in Scottsdale Arizona, had 27 attendees, of which ten signed up for the Continuing Education Units (CEUs). The rest of the schools on the schedule are: three Basic Schools (Savannah, GA in April; Austin, TX in August; Orlando, FL in November in conjunction with PowerGen) and two more Advanced Schools (Buffalo, NY in June; Chicago, IL in October). The Hyatt hotels we contract with are very accommodating and there are always good places to eat in the surrounding areas. If you need more information about our schools, please visit our website (www.egsa.org).

Our schools usually fill up as much as 6 weeks in advance of the date they are held and sometimes sooner. Therefore, if you or any of your colleagues plan to attend a school we strongly urge you to make arrangements and register early.

We are making progress on updating the school curriculum and CEU tests and expect to integrate the changes as the year progresses. One of the changes will be providing the presentations in an electronic format to the students at the conclusion of each school.

Certification Update

As of the end of January 2013, we have 754 certified technicians on the rolls. Recertification is an important event that technicians need to be aware of. Both Ferris State University and EGSA will attempt to contact technicians who are approaching their recertification date (5 years from the date they passed the test). Sometimes the technician has moved to another location and our contact information is not up-to-date. Sometimes technicians leave the industry and do not desire or need to recertify. If you are in either of those situations, it would be appreciated if you updated either Ferris State or EGSA with your contact information.

Certification Testing Sites

Two questions that I get asked repeatedly are: from technicians - where can I take the test? And from some of our larger dealer/members - can we become a testing center? To answer these questions I offer the following information.

Ferris State keeps a data base of approved testing sites; contact them if you need help locating a testing site near you. Their contact information is at the bottom of the certification test registration/order form.

Any service dealer or manufacturer who provides a continuous training program on site can ask

to be a proctoring site for the certification testing. There are several requirements that must be met to ensure the security and integrity of the testing and certification program. A few of these requirements are:

- The person proctoring (administering) the test cannot be an instructor; they must be an administrative or management person not directly involved in the training.
- Store machine-readable answer sheets and test booklets in a locked cabinet or closet until testing begins (test books are not to be reviewed prior to the test).
- Not reproduce any test material.
- Read, become thoroughly familiar with, and follow the procedures and policies of the certification program and testing procedures.
- Conduct the examination in a non-communicative and non-sharing atmosphere among examinees, with continuous surveillance.
- Not assign or transfer proctor responsibility to another person.
- Permit inspection by EGSA and/or Ferris State University of the testing and/or testing site.

If you are interested in becoming a proctoring site for the EGSA Certification Test, please email Ferris State University (egsa@ferris.edu) for more information. Put "EGSA Training Center Proctor Request" in the subject line of your email. A representative from Ferris State will contact you. There is a screening process that any testing site must go through before they are approved.

The more testing sites available around the country, and eventually around the world, the easier it will be for technicians to take the certification test for either initial certification or re-certification. Ferris State maintains a data base of approved testing sites and will gladly work with technicians to identify the closest site to their location. If you have any further questions about these topics please feel free to contact either Ferris State University at egsa@ferris.edu, or Bob Breese at b.breese@egsa.org.

There are a number of exciting things happening in regard to the other projects we are working on (all are progressing well). As those projects reach significant milestones, I will publish the information in this column.

We appreciate your continuing support of the EGSA Education Programs! If you have suggestions for, or questions about, EGSA education programs please, contact Bob Breese via e-mail at b.breese@egsa.org, or by phone at (262) 225-3107. ■

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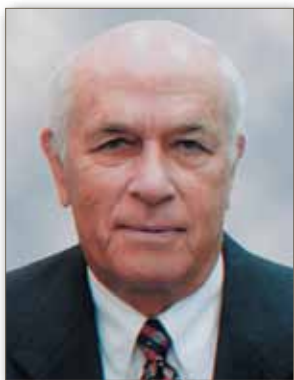
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Codes & Standards

Several minor changes have been proposed for UL documents:

UL 1564 Ed 3 *Standard for Industrial battery Chargers* – which was issued on November 26, 2012, has a proposed revision to remove all references to asbestos materials.

ISO 8528 *Reciprocating internal combustion engine driven alternating current generating sets – Part 5: Generating sets* was approved by 11 votes for and 3 abstentions and so is now available as Edition 3.

The November/December issue of the *NFPA Journal* has a 5 page article on the unintended consequences of the materials used in “Green” buildings meeting the LEED codes. It seems that some materials that are considered “Green” can be more combustible than what was previously used. These materials, when they catch fire, burn hotter and quicker than what was used previously. One example given was oriented stranded board (OSB) a type of structural engineered wood panel that is considered a more economical and sustainable alternative to traditional plywood panels. The article also notes two fires in San Diego attributed to Photo-voltaic installations.

Both Herb Daugherty and I are on the Electrical Committee of NFPA 99, 110 and the NEC. We work hard to make sure the Standards are relevant and not too complicated. However, Super Storm Sandy proved that even when architects and owner/customers follow all the rules in the standards, things do not always work out well. Two hospitals in lower Manhattan lost their emergency power when it was most needed. The hospitals in question met the above standards and apparently had met all the maintenance requirements, such as monthly start-ups. However, when the utility power was lost in Lower Manhattan during the storm, the emergency generators in the hospitals started as required, but soon after, shut down due to lack of fuel. Most emergency systems are located in the basements of buildings because that is the least expensive real estate. The fuel tanks are there or on ground level, because locating them there makes it easy to refill a fuel tank. In this case the generator sets were on the 15th floor of the hospital. So what happened? The design of the hospitals did not take into account the possibility of the basements being flooded. When they heard that the storm was coming, the hospitals did their best to rein-

force the basement areas to protect from flooding. However, their best efforts did not keep out the 13 foot storm surge from the East River. The water, which also inundated the subway system, flooded the basements and the pumps installed to pump the fuel from the basement fuel tank to the 15th floor failed and the engines shut down from lack of fuel.

After Hurricane Katrina, the 2012 edition of NFPA 99, had chapter 12 dedicated to emergency management and it included a section on developing a hazard vulnerability analysis (HVA), which identifies threats – natural, manmade or technological. The code also includes a list of mitigating strategies to eliminate the identified hazards. Unfortunately, hospitals do not have to go through these steps if they do not want to or are not aware of them. However, I am sure many hospitals will now be making a (HVA) in the near future, as they learn of the problems these two hospitals experienced.

The January/February *NFPA Journal* included a story of the hospital in Joplin, MO which was badly damaged in the tornado last summer. In the story there are a lot of lessons to be learned from that disaster, but one of them is that the emergency generator sets were not protected from the winds of the tornado and essentially disappeared. This was also the cause of the explosion of the nuclear plant in Japan after the tsunami. The emergency generator sets which could have kept the nuclear cores cooled were outside and were swept away by the tsunami, so the cores overheated.

So what this all tells us is that even though something meets all the requirements of standards, sometimes we need to think of the unthinkable, and protect items from the unthinkable, such as tornado strikes and water surges.

An active IEC TC 56 document IEC 60300-1/ED3: *Dependability management – Part 1: Guidance for management and application* came up for review and voting. Interestingly, the U.S. expert recommended a vote of disapproval. I have always felt that standards that deal with management or how to test should not be written by organizations like the IEC and have always voted against them. I feel that companies have written or unwritten procedures for doing these things in a way that reflects the companies' culture. ■

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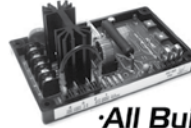
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Ready for Prime Time

CHP Looks Better than Ever to a Growing List of Energy Consumers

By Alan Prosser, Director of Latin and North America Sales, MTU Onsite Energy Corporation

Thomas Edison was many things. Inventor. Entrepreneur. Capitalist. Industrialist. What Edison most definitely was not was content. The Wizard of Menlo Park, who obtained 1,093 patents before he died at the age of 83, was never satisfied with his inventions until they became commercial successes. After he'd introduced the phonograph, he recognized that technology's potential to record sound as well as play it back, and subsequently launched the recorded music industry. When his ingenious Kinetophone successfully synchronized audio to moving pictures for the first time in history, Edison decided to form a motion picture company that produced nineteen of the first "talkies" to hit the big screen.

He certainly could have cemented his place in the Pantheon of People Who Changed the World solely by his invention of the electric light bulb. But to no one's surprise at the time, the irrepressible Mr. Edison didn't, choosing instead to build the Pearl Street power station—the world's first economically viable application of cogeneration principles. Edison's innovative "dynamo" generators and underground network of wires and pipes distributed electricity to those nifty new incandescent bulbs and provided steam heat to hundreds of delighted customers in lower Manhattan.

Given all that, one can't help but wonder if the Wizard wouldn't be just a little disappointed with the lack of progress that's been made in the commercialization of systems similar to the one he built at Pearl Street to produce heat and power from

a single fuel source. Alternative energy sources like solar, wind and geothermal technologies capture the imagination, but have had little real impact on energy markets. America's utility grid is overburdened, but still has the kind of commercial inertia that only a regulated, centralized, century-plus-old system could have.

But cogeneration—combined heat and power—although proven to be remarkably cost-effective and efficient when properly applied, has yet to enjoy the kind of widespread understanding and acceptance it deserves in North America.

Thanks to the recent emergence of compact, powerful, modularized combined heat and power (CHP) systems, along with substantial shifts in the external factors that influence energy choices in general, that may be about to change.

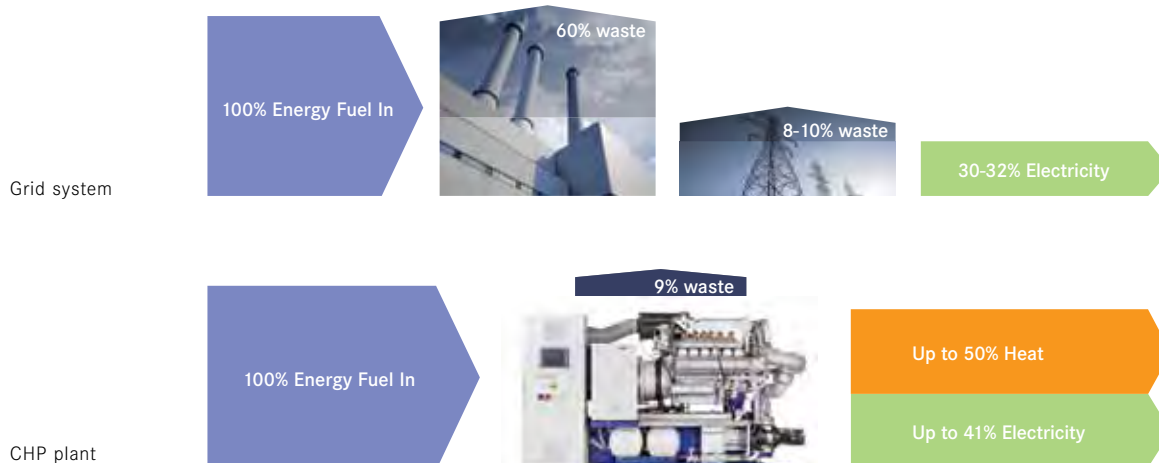
Energy Alchemy?

Less than 8% of all the energy consumed in the U.S. is supplied by cogeneration applications, which means that very, very few prospective CHP customers and suppliers are more than vaguely familiar with its potential. CHP's capacity

for turning one fuel source into up to three forms of usable energy can seem to cogeneration novices to be a kind of power-generation alchemy; it defies the conventional wisdom about how electricity, heat and air conditioning have been generated and distributed for decades. Since its introduction in North America by Edison 130 years ago, the lingering mystery surrounding how CHP works has consistently gotten in the way of a wider public appreciation of how well it works.

Cogeneration—
combined heat
and power—has
yet to enjoy
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it deserves.

ENERGY EFFICIENCY COMPARISON



bine burning oil or natural gas. That simply isn't the case anymore, thanks to recent, significant developments in compact cost-effective natural gas- or biogas-fueled reciprocating engine-generators that can produce electricity and heat at more than 90% efficiency, compared to the 30-32% rate averaged by utilities. As a result, many more North American facilities, including hospitals,

The latter question, of course, is the more pressing one for a nation whose energy demands have been skyrocketing, even as the conventional methods of generating and distributing that energy are being tested now like no time in history. But the mystique about the “how” must nonetheless be erased before modern CHP systems can gain the traction in North American energy markets that they deserve. That customer education process has already begun—after all, there’s a great, new story to tell—and it will become much easier as the number of CHP installations increase.

Historically, CHP applications have been reserved for very large commercial facilities. One recent example is the cogeneration operation of Arcelor Mittal Steel and Sun Coke in East Chicago, IN, where a 95 MW CHP system recovers heat from coke furnaces to provide electricity and process steam to the steel plant, reportedly saving 500,000 tons of carbon dioxide emissions annually compared to plants using separate heat and electricity sources. In another example, silicon producer West Virginia Alloys (Fayette County, WV) utilizes CHP to capture exhaust heat from its manufacturing processes and uses it to drive turbine generators to generate over 400 MW of power for the plant.

Although the benefits of cogeneration are easy to grasp in this kind of large-scale use, the real advances and opportunities in CHP now are in much smaller installations. These new markets have emerged very recently because the “prime movers” in cogeneration—the machines that drive the process converting the fuel source into electricity, heat and (with an absorption chiller), air conditioning—have become more compact, affordable and efficient, and as a result have much faster payback periods for customers who invest in them.

Those of us who make our living in the distributed power industry sometimes overlook the reality that more casual observers of our business typically assume cogeneration only makes sense in those large-scale applications, when the prime mover is that coal-fired plant, a massive steam turbine or a combustion tur-

hotels, commercial buildings, and smaller factories can reap the benefits of CHP.

Those benefits are substantial, particularly in the context of our continent’s ever-growing need for more energy and increasing scrutiny of how that energy is to be produced and distributed. For facilities with the characteristics necessary for a successful CHP system installation, the technology can deliver major bottom-line cost savings, a reduced carbon footprint and reliable power in the event of a utility outage—all while offering radically decreased dependency on the public grid, if not outright energy independence.

Moreover, there’s plenty of evidence that CHP systems are a practical alternative to relying on conventional power delivery, although for now we need to look across the Atlantic to find it. Denmark, for example derives 55% of its power from CHP applications. The European Union gets about 11%.

As you might guess then, case studies featuring the most modern CHP systems are more easily found at businesses like Nordfrost, a 40-

location provider of temporary storage of fresh fruit, vegetables, meat and dairy products based in northern Germany. In its newest seaport terminal in Schorten, Germany, Nordfrost relies on two natural gas-fueled CHP modules driven by one 12-cylinder and one 20-cylinder diesel engine. The resulting 3.1 MW of electricity and 3.5 MW of thermal output supplies all of the electricity needed to power lighting, cold store doors, offices and information technology equipment. Surplus power is fed into the public utility grid. The heat that is recovered from Nordfrost’s CHP modules is used for heating in the winter, and is also used in combination with absorption chillers for the warehouse’s refrigerated storage areas.

Succinctly put, it’s no longer necessary to have a coke furnace, coal-fired electricity plant or a natural gas turbine half a city block long to power an effective cogeneration facility. Today, a high-efficiency, plug-and-play, low-emissions diesel engine-powered 128kW CHP unit could fit in your family garage.

Less than 8%
of all the energy
consumed in the
U.S. is supplied
by cogeneration
applications

Knowledge Gaps and Spark Spreads

There's no doubt that the comparatively low number of CHP installations in North America has created an information gap between suppliers and prospective customers, and as one would expect, a knowledge gap among CHP suppliers themselves. It also must be acknowledged that the market for smaller-scale cogeneration that new CHP modules provide is really just entering its growth curve. Prior to this, customers interested in purchasing a small-scale CHP system more than likely had to rely on multiple suppliers to cobble together an array of equipment to build a cogeneration operation. Unfortunately, the end result may not have offered the kind of efficiency and reliable performance that a CHP module that is engineered, manufactured, sold and supported by a single source offers today. This mismatch between equipment, supplier and after-sale support led to the kind of "it's the software, not the hardware" type of intra-vendor conflicts that marked the early days of personal computers.

That's a pretty stark contrast to the approach applied today by the handful of major manufacturers of CHP systems in North America who have recognized and seized the sales opportunity offered by the latest natural gas and biogas fuel engine technology. Packaged CHP units are engineered, built, installed and supported by single-source companies. The larger players in this arena have a global presence and offer worldwide service for their units. And today's CHP system sales cycle reflects a thorough, methodical and highly scientific approach to a prospective installation, complete with calculations to measure the projected ROI of the proposed CHP facility.

Denmark
derives 55% of its
power from CHP
applications.

For example, measuring and determining "spark spread" is just the starting point for that discernment. That spread—the differential between the local utility's electricity price that the proposed CHP system will displace and the cost of natural gas or biogas fuel—needs to be sufficient to justify the investment in cogeneration. But once sufficient spark spread has been established, there are many other factors that have to be carefully weighed and calculated before committing to CHP.

It's not unusual for a CHP installation to take twelve months from initial consideration to installation, and major suppliers recognize the importance of a successful outcome: Every happy new customer represents a potential advocate for another prospect who's considering this "new" technology that's really not new at all, but tested, proven and more efficient than any other commercially-viable, modular power generator.

Success Begets Success

In fairness, as the old saying goes "it's tough to sell from an empty cart," and with the current meager distribution of CHP applications in North America that metaphorical cart has been pretty bare up until now. Consequently, there have been relatively few companies interested in supporting CHP installations, and fewer still qualified to produce the sophisticated, neatly-packaged, gas-powered units that are now driving the future of the business.

CHP BASICS

What is cogeneration or CHP?

CHP is the simultaneous production of electricity, heat and sometimes air conditioning from a single fuel source. In the process of generating electricity a "prime mover" such as a gas-fueled engine will generate large quantities of heat that is captured and put to use in industrial processes and space heating.

Is CHP new?

No. CHP has been in use in industry for about 130 years. And even back in 1882, Thomas Edison's Pearl Street station in New York City achieved overall operating efficiency of 50% — considerably better than the average 30 to 32% delivered by the public utility grid today. Modern CHP modules operate at 90% or more efficiency.

What types of engines are used in modern, compact CHP systems?

Most packaged CHP systems today are based on gas turbines or gaseous — fueled reciprocating engines. Natural gas or biogas reciprocating engines have enough flexibility to power applications from 400 kW to 5 MW at lowest overall cost.

How much heat can be obtained from a CHP package unit?

A large gas-powered CHP module can produce up to 2,145 kW of electrical power and 2,260 kW of thermal energy operating on natural gas.

Can CHP also provide cooling?

Yes, using the lower temperature heat from the prime mover's cooling system, which is well-suited for powering an absorption chiller that uses heat energy to produce cooling. When a CHP system produces electricity, heat and cooling, it's called trigeneration.

Is CHP good for the environment?

CHP systems offer benefits compared to conventionally-purchased electricity and heat that is generated on-site. For starters, CHP systems require less fuel than separate heat and power systems. Less fuel consumption means fewer greenhouse gas emissions. CHP modules can also operate on biogas or landfill gas that would otherwise be released into the atmosphere. And heat generation by CHP modules creates virtually no additional CO₂ emissions.

Should I consider CHP for my facility?

Prospective CHP users should, at a minimum, have a simultaneous need for electricity and heating/cooling for at least 4,000 hours a year. A detailed analysis by a qualified supplier is a must to calculate "spark spread"—a term that means the difference between the market price of electricity and its cost of production. When natural gas prices are low and electricity costs are high as they are now in North America, the spark spread is positive and it's more economical to generate power onsite with a CHP module than to produce it from a local utility.

That will surely change in coming years as political and cultural pressure continues to demand greenhouse gas emission reductions, federal and state governments continue to offer incentives encouraging alternative energy sources, and high state tariffs on electricity purchases persist.

There is also a growing school of thought that views cogeneration very favorably as part of the solution to what's viewed as an overburdened centralized utility grid. Advocates of the so-called "smart grid" approach to decentralizing power believe that a kind of peer-to-peer electrical power infrastructure would be a far more efficient way to distribute and manage electricity use, and that CHP should play a part in that new decentralized infrastructure.

According to the white paper, "US Smart Grid: Finding New Ways to Cut Carbon and Create Jobs" (April 19, 2011, Marcy Lowe, Hua Fan and Gary Gereffi), "The highly centralized, one-way system wastes energy and increasingly struggles to keep up with demand. Since 1982, growth in peak power demand— such as on summer days when countless air conditioners are running— has outpaced growth in transmission by nearly 25% per year. Too often, the result is power outages and even blackouts. The U.S. Department of Energy (DOE) reports that such interruptions cost the nation at least \$150 billion annually (U.S. DOE, 2008)."

There is little question that external factors like these are paving the way for a greater receptivity to the idea of incorporating more CHP systems into everyday energy applications. But for that idea to get converted into action in the form of actual purchases of CHP gear, there is no more effective motivator than basic economics. The biggest increase in CHP demand will almost surely arise simply as a result of more and more power consumers discovering how, under the right circumstances, CHP might just be the biggest bargain in energy today.

Prime Prospects

So who will be the most likely early adopters of the new modular CHP systems? It stands to reason that it will be the power customers who will most immediately benefit from the cost savings this recently updated technology delivers. Whether getting North American drivers to consider hybrid cars or motivating citizens to recycle newspapers and containers in our households, history shows that going green is a lot more appealing to consumers who realize that by doing so they'll be saving green. Applying that admittedly capitalistic rule, there are certain specific facility types and locations that could benefit substantially from the newest CHP modules.

1. Hotels, hospitals, condominium/commercial buildings

Large facilities like these have a high possibility of more efficient and less costly thermal utilization because they have significant demand for electricity, hot water, space heating and cooling.

2. Corporate and university campuses

A large corporate headquarters could use a CHP module for electricity and heat and for space heating and cooling. Tognum America, Inc. (headquarters in Novi Michigan), is doing just that. University campuses are often already set up for district heating and cooling; a CHP module would be a natural fit here as well.

3. Wastewater treatment plants

Here, a CHP module could be used to produce the electricity needed to run pumps and blowers, while the waste heat from the gas engine could be used to warm effluent tanks to speed up bacterial digestion or to dry sludge for disposal.

4. Industrial facilities

Plants, warehouses, and other industrial facilities with simultaneous need for power, heating, and cooling represent an excellent opportunity for a CHP application. Facilities that manufacture or process food (especially milk, chocolate and similar products with processes that consume large amounts of hot water for sanitizing), bottle beverages, produce ethanol, or make pulp and paper are particularly good candidates for cogeneration.

5. Commercial complexes

Large resorts, hotel complexes, athletic clubs, gyms, natatoriums, shopping malls and greenhouses can all benefit from CHP.

6. Locations generally favorable for CHP systems

States and territories with high average electricity Tariffs — say, 12 cents per kW-Hour and up— offer strong opportunities for CHP applications. This includes New York, Connecticut and Massachusetts. Some states offer favorable CHP incentives, including NY (NYSERDA), CT (Clean Energy Fund), MD (Maryland CHP Incentive Program), and MA (Massachusetts CHP Incentive Program).

Like any milestone business opportunity, a convergence of economic, political and cultural circumstances has paved the way for widespread understanding and acceptance of cogeneration— and the new modularized CHP systems that now make it practical for thousands of future commercial applications.

As hundreds of New York City citizens discovered when they happily tossed their smelly gas lanterns in favor of Mr. Edison's amazing electric light bulb, the future is already here. ■

About the Author

Alan Prosser joined MTU Onsite Energy (Mankato, Minnesota) in 1991. He is currently Director of Latin and North America Sales.



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Tier 4 Alternatives for Stationary Engines: Practical Solutions that Don't Break the Bank

By John Conine, Sales Director, Worldwide Power Products

On January 14, 2013, the Environmental Protection Agency (EPA) announced it had finalized amendments to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for stationary reciprocating internal combustion engines (RICE). These amendments, entitled "Title 40 CFR Parts 60, 85 et al., Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," represent the latest guidance from the EPA on the emission standards that have come to be known as Tier 4.

The amendments, in the words of the EPA, were "enacted to ensure that the standards are cost effective, achievable and protective." However, the amendments didn't loosen the restrictions for new generators and other RICE equipment. Rather, they mainly addressed specific unique conditions such as emergency power generation and offshore use.

Given the flurry of changes that predate this latest guidance and the amount of circulating information that indicates generators MUST conform to the Tier 4 standards, many firms are left wondering how this impacts their operations—and their budgets.

The reality is that despite the hype, in most cases companies are able to use pre-Tier 4 generator sets indefinitely without the need to purchase a brand new generator. Per the various rulings handed down over time, most existing engines that have been placed into commerce are grandfathered (excluded from meeting the requirements during their lifetimes). More importantly for budget-conscious companies looking for generator replacements, these engines can be sold to new owners multiple times in their lives without ever losing the exemption, even if they are later reconditioned to manufacturer specs.

This information isn't spelled out in one designated section within the NESHAP documents. It's built up, layer after layer, in each revision of these detailed, complicated instruments, making the reality of the situation hazy for many firms.

In this article, we'll clear away that haze, providing the background and specifics you need to understand how you can take advantage of the NESHAP exclusion. We'll also detail some special considerations that may impact your ability to use it and offer a few suggestions for resolving those issues, as well.

Grandfather Grows Up

Much of the confusion regarding compliance with NESHAP relates to the standards themselves. Every update to the standards for both stationary and portable (non-road) diesel engines since 2004 has been marked "Final," despite the fact that many more versions came after it. For example, final standards of performance for stationary engines were also issued in 2006 and 2011 as a consequence of comment periods being extended. Now, in 2013, the EPA has released what it proclaims are the final amendments.

We are not in any way criticizing the EPA's efforts. Hundreds, if not thousands, of commercial and industrial companies and other interests have participated in this process, not only with comments but also with formal complaints and even lawsuits regarding the hardship being placed on various industries by the NESHAP rulings.

The end result of these comment periods is that the current set of rules, including a new one handed down in January, are comprehensive in their detailing the EPA's treatment of existing

engines (for specifics, see the sidebar in this article, “The RICE Rule”). Because the information is not presented in a single, final, official EPA document, many companies may be unaware of the precise exemptions and how they relate to a specific location.

The Value of Used

Despite the confusing, sometimes conflicting language in these documents, the reality is that most existing engines are grandfathered by virtue of their age or because they meet earlier NESHAP standards. Furthermore, site conditions (and related environmental regulations) weigh heavily on whether or not an engine is exempted from NESHAP.

Even though the NESHAP rules relate specifically to stationary RICE engines, compliance for diesel generator engines depends, not only on the engine specifically, but on its installed location. Any existing engine or genset can be sold or transferred to one or more third parties, and the engine’s compliance with NESHAP will be based on the new installed location. As a result, even non-compliant engines located in special hazard areas may become compliant if they are relocated to a site operating under a different set of (or no) environmental restrictions.

Let’s assume a company has a 1988 diesel generator that’s on its last legs and it is seeking a replacement. If the firm is not located in an Area or Major source of HAP, the firm can purchase any used engine manufactured as late as March 31, 2006 and meet EPA guidelines

If they select one manufactured and put into service at a later date, it should be compliant with the two most recent standards—Tier 3 or 4i—and therefore permanently grandfathered. In both cases, they shouldn’t be subject to any monitoring and reporting rules, or to any retroactive compliance or retrofitting requirements (although that option remains open to them).

Even if the engine has been fully reconditioned—or reconstructed—as long as the work meets EPA guidelines, it qualifies for the exclusion. Specifically, reconstructed engines are allowed to retain their original date of manufacture and be grandfathered for compliance purposes unless:

- The fixed capital cost of the new and refurbished components exceeds 75% of the fixed capital cost of comparable, entirely new equipment, or
- The engine was produced from a previously used engine block and all components are new except the engine block.

Lest you think used generators are not a viable, long-term option, let me reassure you. Not only are there many fully grandfathered engines on the market with years (if not decades) of serviceability remaining, but we’re starting to see newer Tier 3 (and even some Tier 4i) units come available, which will satisfy NESHAP rules while giving firms the benefit of a nearly new engine.

Reliable, low-hour generators are surprisingly easy to find if you work with a company that has access to a wide array of resources. At Worldwide Power Products (WPP), we frequently see “gently” used generators that have been taken out of service because of configuration changes, business closures, equipment “trade ups” and other lifecycle events.

As-Is or Modified?

As previously mentioned, there are considerations that might affect a firm’s ability to purchase a used generator in its as-built state as a Tier 4 alternative. A company might be located in a non-attainment zone or be subject to other environmental regulations, so strict that even a Tier 3 or Tier 4i unit will not place it in compliance for long. It might bid on contracts that require it to use only equipment that meets specific environmental standards. (If this is the case, check the stipulations. You may be able to satisfy these requirements with a recent-model generator.)

The good news is that even with special circumstances, most used engines can become money-saving solutions with appropriate modifications. Retrofitting or modifying an older engine for emissions treatment is an entirely practical solution for companies that must meet more stringent environmental requirements but do not want to bear the expense of a brand new engine.

In fact, the option to retrofit or otherwise modify a used engine to meet required standards affords purchasers greater flexibility regarding their purchase, no matter what the site conditions might be. If a site has special requirements, purchasers can work with their vendors to have their chosen generator modified to meet those specific conditions. Any site requirements at the previous location will have no applicability to the current situation.

Purchase Right

To ensure your used equipment purchase goes smoothly and gives you years of freedom from the onus of Tier 4, it’s crucial that you purchase a properly documented and maintained unit from a highly experienced vendor. The best used-generator vendors put their stock through rigorous testing and maintenance checks before selling it to anyone (WPP uses a 42-point inspection checklist). However not all vendors take this approach.

In the September/October 2012 issue of *Powerline* (available for download at www.egsa.org), WPP wrote a detailed article on selecting a generator vendor and purchasing used equipment. We recommend you refer to it for additional guidance. Following are some key selection points, tailored for criteria specific to emission standards that may apply to you now or in the future:

1. Does the vendor have a strong reputation of selling quality products, and does it stand behind every product it sells?
2. Can the vendor provide documentation that it performed load bank tests, extensive inspections and comprehensive maintenance on any unit you purchase?
3. Is the vendor familiar with federal NESHAP/HAP and non-attainment (including state and local) guidelines and willing to find you a unit that meets the specific requirements of your job site?
4. Does the vendor have experience procuring and testing/inspecting generators that comply with the stipulations of non-attainment zones?
5. Will the vendor help you size the generator very precisely? NESHAP rules tie directly to generator size (kW and HP), so purchasing a larger generator than needed could subject you to unnecessary regulations and reporting requirements.
6. Will the vendor perform service and maintenance on

the unit, if you desire? Proper maintenance is crucial, not only to extending generator life but also to controlling toxic emissions. (For more on generator maintenance, refer to the article WPP wrote for *Powerline*, published in the January/February 2013 issue.)

Regarding your choice of generator, your vendor should be able to procure a unit that will meet not only your requirements, but that of the site. Some specific questions to which you should have documented answers, especially if you are located in a non-attainment zone are:

1. What is the exact date of manufacture?
2. Is the unit properly labeled for its age and NESHAP level, if such is required by the EPA?
3. When was the unit first installed under the EPA's definition? (This definition was modified during the commenting process to mean "placed and secured where it is intended to be operated... the engine does not have to be capable of being started before it can be considered installed.")
4. Where was the unit originally installed? Has it already been retrofitted with any emissions-control devices? Is there documentation to support these modifications?
5. Has the engine been rebuilt or reconstructed? If so, is there documentation of the date, and was it before or after July 2005? Did the work meet the EPA's criteria for retaining its original manufacture date?
6. Can it be modified to meet Tier 4 requirements or other state and local regulations if such becomes necessary? If so, approximately how much will that cost?

THE RICE RULE

The EPA refers to its NESHAP guidance for generators and other stationary or non-road engines as "the RICE rule." Per the final guidance proposed in February 2010 and published in June 2011¹, the NESHAP guidance applies to RICE (such as gensets) that meet the following qualifications:

Engines >500 Horsepower (HP) at Major source of hazardous air pollutants (HAP)

- Existing engines if constructed before December 19, 2002
- New engines if constructed on or after December 19, 2002
- Reconstructed engines if reconstruction began on or after December 19, 2002

Engines ≤500 HP located at Major source of HAP and engines of all horsepower located at an Area source of HAP:

- Existing engines if constructed before June 12, 2006
- New engines if constructed on or after June 12, 2006
- Reconstructed engines if reconstruction began on or after June 12, 2006

For engines not located at a source of HAP, the EPA² states that only the following engines must comply with the NESHAP guidance:

- Engines constructed (ordered) after July 11, 2005, and manufactured after April 1, 2006 (July 1, 2006 for fire pump engines), or
- Modified or reconstructed after July 11, 2005.

The January 2013 guidance lessens these restrictions with the following amendments:

- At Area sources of HAP, existing stationary CI engines installed before June 12, 2006, are in compliance with the NESHAP if they are Tier 3-certified.
- Tier 1 and Tier 2 certified engines that are scheduled to be replaced by 2018 in compliance with state and locally enforceable requirements will be considered in compliance with the RICE NESHAP from the compliance date (May 3, 2013) until January 1, 2015, or 12 years after installation date, but not later than June 1, 2018. In exchange for being given this additional time to replace their engines without having to install controls, owners and operators are required to use management practices during the period.

¹Title 40 CFR Parts 60, 1039, 1042, 1065, 1068

²Title 40 CFR, subpart IIII, § 60.4200 (dated July 2011)

Prudence Prevails

As we mentioned earlier, a percentage of generator users may be subject to especially stringent environmental regulations that will affect their choice of a used generator. As a safeguard, it is incumbent upon every company to determine what, if any, special emission standards and reporting requirements apply to them and their site. Companies with the technical capacity and resources to handle this in-house can check with the EPA as well as state and local governments to determine if there are special site or area environmental conditions that affect them.

This can be tricky for the untrained, who may overlook landmine issues such as pending legislation that could apply retroactively to generators not installed yet. That's why it is particularly important for generator purchasers to work with a vendor that has the expertise to guide them through the selection process. (WPP works with its clients before every purchase to ensure it is a fit for the specific requirements of the company and installation site.)

Despite the need for prudent selection, any company—even one with extremely challenging environmental regulations—can reap the considerable financial benefits of used equipment (not to mention the accelerated delivery time compared to ordering a new unit), provided they purchase a well-documented and maintained unit appropriate to the situation.

Final Guidance

Although the EPA rules are somewhat ambiguous unless you evaluate them in their totality, the savings from purchasing quality, well-maintained used engines are not. Furthermore, purchasing quality used equipment that meets the site require-

ments is a responsible, appropriate environmental decision. Even the EPA, in its final amendments document, commended the participants, the process and the final outcome as being a win-win for everyone.

The final compromise reduces for generator users (collectively) the capital and annual costs of the original 2010 rules by \$287 million and \$139 million, respectively. Yet, the amended rules still ensure stricter emission standards—especially in areas where it is badly needed.

The EPA estimates that with the amendments incorporated, the reductions each year starting in 2013 are:

- 2,800 tons per year (tpy) of HAP,
- 36,000 tpy of carbon monoxide,
- 2,800 tpy of particulate matter,
- 9,600 tpy of nitrogen oxides, and
- 36,000 tpy of volatile organic compounds.

The EPA also estimates the monetized co-benefits of the updated standards to be \$830 million to \$2.1 billion. If you follow the guidance in this article, should a customer ask you about your compliance with the NESHAP rules, you can quote these statistics and tell them you are 100% compliant—and ready to do business. ■

About the Author

John Conine is the Sales Director for Worldwide Power Products, an independent company based in Houston, TX that buys and sells new and used generator sets and engines worldwide. Recently recognized by Forbes Magazine as one of America's 100 Most Promising Companies, WWP specializes in power generation equipment including new and used engines and generator sets. In addition, the firm provides engineering, maintenance and repair plus rental services for job sites in Texas, Louisiana and in the Gulf of Mexico.

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Last January (2012), we rolled out a program with procedures in place to track and formally recognize Members who make contributions to the Association and the Industry. For obvious reasons, this list is not foolproof. EGSA Staff has poured over the historical data to come up with this compre-

KEY TO COMMITTEE CODES

| | |
|------|--------------------------------------|
| AHNM | Ad Hoc Nominating Procedures |
| BG | Buying Guide |
| CS | Codes & Standards |
| CG | Co-Gen/Environmental |
| CN | Convention |
| CC | Communications & Conventions |
| DG | Distributed Generation Sub Committee |
| DD | Distributor/Dealer |
| ED | Education |
| EM | Electronic Media |
| GN | General Subcommittee |
| GR | Government Relations |
| GN | Green |
| IT | International Trade |
| MT | Market Trends |
| MB | Membership |
| MM | Military Mobile Power |
| NM | Nominating |
| PG | Power Generation Sub Committee |
| RB | Reference Book |
| SC | Scholarship |
| SLRP | Strategic Long Range Planning |
| TS | Trade Show |
| TC | Tech Certification |

| Name | Executive Board | Director | Committee Chair | Committee Officer | Book Author | Past Award Recipient | | | | | School Instructor |
|-------------------------|-----------------|------------------------------|--|-------------------------------------|-------------|----------------------|-----------|---------|--------|--------------------|-----------------------|
| | | | | | | Timmer | Carpenter | Johnson | Wright | President's | |
| AHMED, MEHMOOD | | | | | x | | | | | | |
| ALLEY, DAVE | | 2001 to '03 | ED 2003 and before | | x | 2001 | | | | | 1998 to current |
| ANDERSON, LOWELL | | | | | | 1972 | | | | | |
| ANDERSON, WAYNE | | | | | x | | | | | | |
| ANDREWS, FRANCIS J. | | | | | x | | | | | | |
| ANTONETTI, JOE | | | | GR 2009 to current | | | | | | | |
| ARMSTRONG, JEFF | | | | | x | | | | | | |
| BACHMAN, DON | | | | | x | | | | | | |
| BARRIOS, DANIEL | | | | | | | | | | | Start 2012 |
| BASLER, MATT | | 2005 | | | x | | | | | | |
| BASLER, MIKE | | | | | x | | | | | | |
| BAUER, WARNER | 2005 to '09 | 2002 to '04 | CG 1993 DG 2003 | CC 2004 & '05 | x | 1993 | 2011 | | | | |
| BEASLEY, VAUGHN | 2011 to current | 2008 to '10 | DD 2009 to '11 | DD 2006 to '08 | | | | | | | |
| BENKE, JAMES | | | | | x | | | | | | |
| BERG, BRIAN | | 2011 to '13 | MT 2009 to '11 | MT 2007 & '08 | | | | | | | |
| BIRDSOING, BOB | | | | | | | | | | | 2004 to current |
| BLACKMAN, DONALD | | | | | x | | | | | | |
| BROWN, DAVID | | 2009 to '11 | BG 2010 & '11 | | | | | | | | |
| CARR, RAYMOND | | | | | | | | | | | 2007 to '10 |
| CASTENSCHOILD, RENE | | | | | x | | | | | | |
| CASTERLINE, LES | | | MT co-chair 2003 to '05 MT 2006 to '09 | | | | | | | | |
| CHELMECKI, CHRIS | | | | | x | | | | | | |
| CHEN, SCOTT | | | | | x | | | | | | |
| CHEN, SIMON | | | | | x | | | | | | |
| CHRYSAM, WALTER | | | | | | | | | | | 2007 to current |
| CLEWES, WILLIAM | | | | | | | | | | | Start 2012 |
| CLOPHUS, PATRICK | | | | | x | | | | | | |
| DALEY, JIM | | | | | x | | | | | | |
| DAUFFENBACH, MIKE | | | | | x | | | | | | 2004 to current |
| DAY, BILL | | | | | | | | | | | 2005 to current |
| DEMARTINO, NATHAN | | | | CC 2011 to current | | | | | | | |
| DENNING, JESS | | | | | | | | | | | Start 2012 |
| DETOR, NICK | | | | GN 2009 & '10 | | | | | | | |
| DUKE, KEITH | | | | | x | | | | | | "2001 to '07 2011" |
| EVANS, KATIE | | 2013 to '15 | IT 2012 to current | IT 2011 to 2012 | | | | | | | |
| EVANS, STEVE | | 2012 to '14 | GN 2011 to 2012 | GN 2009 to '10 | x | | | | | | 2010 to current |
| FENNELL, BRAD | | 2010 to '12 | TS 2010 | | x | | | | | | |
| FINNEY, NICK | | | | | | | | | | | 2008 to '10 |
| GAINES, TERRY | | | | | x | | | 2008 | | | 1999 to current |
| GAWLOWSKI, ROMAN | | | | | x | | | | | | |
| GARCIA, JOHN | | | MB 2012 to current | | | | | | | | |
| GILLETTE, ALLEN | | | | | x | | | | | | |
| GORE, JOHN | | | | | x | | | | | | |
| HAALAND, OLE | | | | | x | | | | | | 1998 to current |
| HABIC, CHARLIE | | 2007 to '09 | MB 2006 & '07 AHNM 2009 & '10 | MB 2004 & '05 CC 2011 to current | | 2012 | | | | | |
| HAFICH, BOB | 2013 to current | "2001 to '03 2011 to '13" | NM 2004 MB 2008 to '11 TC 2009 to '11 | MB 2004 to '07 TC 2004 to '08 | | 2012 | 2010 | | | 2012 (2 awards) | |
| HAFICH, JOE | | 2008 to '10 | DD 2003 to '08 | | | 2010 | | | | | |
| HAMILTON, RANDY | | | | | x | | | | | | |
| HARTZEL, RON | 2007 to '11 | 2003 to '06 | CS 2003 to '07 EM 2006 to '10 | | | 2008 | | | | 2012 | |
| HAWKINS, JOHN | | | CS 2008 to '10 | CS 2006 & 07 | | | | | | | |
| HANDLIN, HARRY | | | | | | | | | | | 2008 to current |
| HINDE, TIM | | | | | x | | | | | | 1998 to current |
| HODGKINS, RICK | | | | DD 2011 | | | | | | | |
| HOEF, JOHN | | | | MT 2012 to current | | | | | | | |
| HURTADO, DAVID | | 2001 to '03 | | | | | | | | | |
| HOLTGREIVE, ROBERT | | | | | x | | | | | | |
| HUNT, JAMES | | | | | x | | | | | | |
| IBRAHIM, MOHAMMED | | | | | x | | | | | | |
| ISKANDAR, DAVID | | | | | x | | | | | | |
| JI, ZHENLIN | | | | | x | | | | | | |
| JOHNSON, ANTHONY | | | | | | | | | | | Start 2012 |
| JOHNSON, GERALD (Jerry) | | | | | x | | | | | | |
| KACH, ED | | | | | | | | | | | 1997 to 2010 |
| KACVINSKY, RAY | 2002 to '06 | 2000 to '02 | NM 2009 | | | | | | | | |
| KAEWERT, WILLIAM | | | | | x | | | | | | Since 2010 |
| KELLY, JR., JOHN | 2008 to 2012 | 2005 to '07 | DD 1997 to 2002 | | | | | | | 2012 | |
| KOEHMSTEDT, STEVE | | | | | | | | | | | Since 2011 |
| KUSKO, ALEXANDER | | | | | x | | | | | | |
| LAGREE, JAMES | | | | | x | | | | | | |
| LATHROP, TODD | | 2012 to '14 | CS 2011 to current | CS 2007 to '10 | x | | | | | | 2005 to current |
| LAURENTS, DEBRA | 2010 to current | 2006 to '08 | SLRP 2007 to current | MB 2008 to '11 TC 2006 to '07 | | | | | | 2012 | |
| LAWRENCE, STEVE | | | | | | | | | | | "2002 to '08 2011" |
| LEBLANC, LEO | 1999 to 2004 | 1998 to 2000 | MB 1997 CC 2005 & '06 TC 2004 to '08 SC 2006 to '08 | | x | 1997 2007 | 1999 | | | | 2005-2011 |
| LECHTANSKI, JOE | | | | | x | | | | | | |

| Name | Executive Board | Director | Committee Chair | Committee Officer | Book Author | Past Award Recipient | | | | | School Instructor |
|----------------------|-----------------|--------------|---|-----------------------|-------------|----------------------|-----------|---------|--------|-------------|-------------------|
| | | | | | | Timmler | Carpenter | Johnson | Wright | President's | |
| LESLIE, DAVID | | | | | x | | | | | | |
| LEWIS, ROBERT | | | GR 2012 to current | GR 2009 to '11 | | | | | | | |
| LEWIT, TANIA | | | | IT 2012 to current | | | | | | | |
| LINTON, GREG | 2006 to '10 | 2002 to '04 | TC 2004 NM 2010 | | | | | | | 2012 | |
| MEDORA, NOSHIRWAN | | | | | x | | | | | | |
| MERRITT, MICKEY | | | | | x | | | | | | |
| MCSHEFFREY, JASON | | | | | | | | | | | Since 2011 |
| MCDONALD, BOBBY | | 2008 to '10 | | DD 2003 to '09 | | | | | | | |
| MCDONALD, JIM | | | GN 2012 to current | GN 2011 to 2012 | x | | | | | | 2008 to current |
| MORRISON, RICK | | 2013 to '15 | | DD 2011 to current | | | | | | | |
| MUELLER, ROBERT | | | | | x | | | | | | |
| MURPHY, DEBRA | | | | | x | | | | | | |
| MURPHY, ED | 2012 to current | 2003 to '05 | MB 2003 CC - 2011 to current | CC 2007 to '10 | | 2003 | | | | | |
| NELAND, RICHARD | | | | IT 2005 to '08 | | | | | | | |
| NEWELL, GEORGE | | 1998 to 2000 | | | | | | | | | |
| NUNMAKER, RANDALL | | 2006 to '08 | MB 2004 & '05 | CC 2011 DD 2004 & '05 | | | | | | | |
| OBERTO, LEE | | | | | x | | | | | | |
| OLSEN, DICK | | | IT 2004 to '08 | | | | | | | | |
| PADDEN, MIKE | | | GR co-chair 2009 to '11 | | | | | | | | |
| PAFFORD, BILL | | 2004 to '06 | CS 2001 & 02 | | | | | | | | |
| PATTERSON, DEAN | | | | | x | | | | | | |
| PEARSON, DENNIS | | | ED 2011 to current | | | | | | | | |
| PEREZ, LARRY | | 2011 to '13 | | | x | | | | | | 1995 to '98 |
| PEREZ, LUIS | | | | | | | | | | | 2004 to '08 |
| PESCH, GUIDO | | | | | x | | | | | | |
| PETTY, WALTER | | 2013 to '15 | | GN 2011 | | | | | | | |
| PIERSON, BEN | | | | ED 2011 to current | x | | | | | | |
| PISKE, ROBERT | | | DD 2011 to current | CS 2010 | | | | | | | |
| POPE, MICHAEL | 2009 to current | 2005 to '07 | ED 2003 to '06 GN 2009 & '10 | | x | 2006 | 2009 | | 2003 | | 2007 to current |
| PREVOZNIK, MARK | | | | | x | | | | | | |
| PROSSER, AL | | 2008 to '10 | | MB 2008 to '11 | | | | | | | |
| REDDING, WAYNE | | | | | | | | | | | Start 2012 |
| RISSER, LYNDON | | | | DD 2009 to current | | | | | | | |
| ROUNDTREE, DENNIS | | 2007 to '09 | ED 2007 & '08 | ED 2004 to '06 | | 2009 | | | 2006 | | 1998 to current |
| SAATHOFF, SANDRA | | | | | x | | | | | | |
| SANDERS, RICHARD | | | | | x | | | | | | |
| SCHAEFER, RICH | | | | | x | | | | | | |
| SCHROEDER, RON | | 2010 to '12 | | | x | | | | | | 1994 to current |
| SCHWARTZENBERG, JOHN | | | | | x | | | | | | |
| SCOTT, RICHARD | | | | | x | | | | | | |
| SEFTICK, RON | 1995 to '99 | 1992 to '94 | | | | | 2000 | | | | |
| SIEBERT, MARTY | | | | | x | | | | | | |
| SIMMONS, ROBERT | | | | | x | | | | | | |
| SLATER, LANNY | | 2013 to '15 | IT 2010 to 2012 | IT 2009 to 2012 | | | | | | | |
| STEELE, MARK | | 2010 to '12 | GR co-chair 2009 to '11 | GR 2005 to '08 | | | | | | | |
| STOYANAC, STEVE | 2001 to '05 | 1998 to 2000 | MB 2001 to '03 NM 2005 & '08 RB 2006 to '12 | | x | 2000 | 2006 | | | | 2008 to current |
| STUEBI, RICHARD | | | | | x | | | | | | |
| STRINGER, DAVE | | | | GR 2012 to current | x | | | | | | |
| STRUSS, DARRELL | | | | IT 2009 & '10 | | | | | | | |
| SVENDSEN, JOHN | | | | CS 2011 to current | | | | | | | |
| SWEENEY, ROB | | | | TC 2009 & '10 | | | | | | | |
| SZALZUS, MARK | | | | | | | | | | | 2006 to '08 |
| TAIT, WARREN | | | | | x | | | | | | |
| TINGLE, KYLE | | 2012 to '14 | MT 2011-current | MT 2009 to '11 | | | | | | | |
| VAN MAAREN, RICHARD | | | | | x | | | | | | |
| VILD, BRENT | | | | | | | | | | | 2007 to '09 |
| VISIOLI, ARMAND | | 2003 to '05 | CC 2003 & '04 | | | 2005 | | | | | |
| WALTER, BRAD | | | | | x | | | | | | |
| WALTERS, GREG | | 2009 to '11 | | ED 2011 to current | | | | | | | |
| WATSON, DARREL | | | | | | | | | | | 2006 to '09 2011 |
| WEIMER, RANDY | | 1996 to '98 | | | | | | | | | |
| WESTHOFFEN, CHUCK | | | | MT 2009 to '11 | | | | | | | |
| WHITTALL, HERB | | 1993 to '95 | | | | | | 1996 | | | |
| WILHELM-VOLPI, LOREL | | | | IT 2009 & '10 | | | | | | | |
| WINNIE, PETER | | | | | x | | | | | | |
| WITKOWSKI, MIKE | | 2009 to '11 | | CS 2008 to current | x | | | | | | 2008 to current |
| WOLF, FRED | | | | | x | | | | | | |
| WOOD, RAY | | | MM 2003 GR 1985, 2004 to '08 | | | 1985 | | | | | |
| ZIRNHELT, JOE | | | | MT 2011 to current | | | | | | | |
| ZHOU, XIN | | | | | x | | | | | | |

hensive “running list of formal volunteer achievements.”

The chart also includes a Committee Key to the left of this chart to assist you with the abbreviations. A few comments on the chart - Committee Officers will be recognized after completion of their first year of service. The chart does not include our retired members' achievements.

The chart represents a list of current EGSA Members who have contributed significantly to the Association in a formalized, organized chart. This information is also housed on the EGSA website and is updated in real time by EGSA Staff.

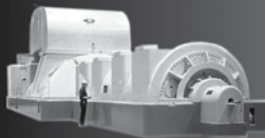
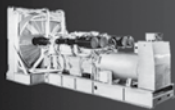
This chart is important for several reasons, but most importantly, to track our Members' achievements and valuable contributions made on behalf of EGSA and to provide a roadmap for interested Members who wish to be considered for leadership roles within the Association.

We apologize in advance if we have omitted anyone by accident or left off a valuable member contribution. Please correct us if you find an error by contacting Kim Giles, EGSA Marketing Manager at k.giles@egsa.org. ■



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September 15 – 17, 2013

The EGSA Fall 2013 Technical & Marketing Conference in Seattle Will Make History

EGSA will host an Executive Leadership Summit during the Fall 2013 Conference in September. We have asked the senior executives from the five largest generator set manufacturers to participate in a panel discussion. We believe that this will be the first event of its kind in the on-site power generation industry.

We are most grateful to the following, for their agreement to participate:

- **BOB KOVAL**, Electric Power General Manager Investor Projects, **Caterpillar, Inc.**
- **DENNIS HEATHFIELD**, Executive Director, **Cummins Power Generation**
- **AARON JAGDFELD**, President/CEO, **Generac Power Systems**
- **LARRY BRYCE**, P.E., President, **Kohler Power Systems**
- **MATTHIAS VOGEL**, Vice President, Global Sales, **MTU Onsite Energy**

In addition, **MIKE OSENGA**, President of Diesel & Gas Turbine Publications and Publisher of Diesel Progress/Diesel Progress International, has kindly agreed to serve as moderator.

In broad terms, we have suggested to the Executives that the following topics would be of interest to our members:

1. **Challenges** – regulations, markets, politics, people, foreign competition, cyber protection
2. **Trends** – technical, markets, distribution
3. **Opportunities** – new technology, offsetting generator set investments with CHP or DR, new markets, weather events, alliances
4. **EGSA's role to further benefit the onsite power generation industry**

A small Working Group of volunteers has been formed to ensure a successful event. It will define the talking points and create an interesting format. The Group consists of Armand Visioli - ASCO Power Technologies, Michael Pope - Clariant Corp. (Chair), Charlie Habic - Gillette Generators, Ed Murphy - Power Search, Inc., Rick Morrison - Nixon Power Services, Co., and Kim Giles - Staff Liaison and EGSA Marketing Manager.

Ideas for questions to the panel are welcome and should be directed to e-mail@egsa.org.

You have a unique opportunity to witness the industry's top leaders share their ideas and visions of the on-site power generation world.

September 15–17, 2013, Seattle, WA....Mark your calendars! ■

Alleviate Any Cause for Concern: Please Read Carefully!

It has come to EGSA's attention that several EGSA members and exhibitors at EGSA conventions and conferences have been solicited via the US Postal Service by an organization that is in no way affiliated or associated with the Electrical Generating Systems Association (EGSA).

The letter received requests that you update your exhibitor listing information.

The contact information shown on the form is that of EGSA's Executive Director, Jalane Kellough, along with accurate phone and contact information that may lead you to believe that this solicitation is in some way affiliated with EGSA, it is not. A sample of this letter and the company logo is shown above.

Please take particular note of the legal copy that appears on the form which requires payment within 10 business days from the date that you submit the form. **The cost is \$1,717.00 each year for a term of three years.**

Do not, as stated before, believe that this solicitation is in any way associated with the Electrical Generating Systems Association (EGSA). ■



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Emissions and Silencing for On-Site Power – Exhaust System Integration Continues

By Bob Stelzer, Chief Technical Officer, Safety Power Inc.

The U.S. Environment Protection Agency's (EPA) RICE NESHAP initiative has accelerated the integration of the emissions system and the silencer for on-site power applications. As emission standards continue to tighten it is likely that we will see continued exhaust system integration. A "single cube" exhaust system makes it easier for engine manufacturers, dealers and packagers to meet the regulatory requirements for any air shed in North America and beyond. To be effective, the single cube approach needs to accommodate any required combination of emissions control and silencing while ensuring that engine back pressure specifications are met. The single cube approach allows the system designer to meet the liabilities associated with engine exhaust requirements by dealing with a single supplier.

Overview of Emissions Requirements

For diesel engines, in addition to the silencer, all or some of the following emissions devices may be required:

1. Diesel Oxidation Catalyst (DOC) to reduce unburned Hydrocarbons and Carbon Monoxide (CO)
2. Diesel Particulate Filter (DPF) to reduce Particulate Matter (PM)
3. Selective Catalytic Reduction (SCR) to reduce Nitrogen Oxides (NOx).

The required combination of these emission devices can vary from application to application. Some projects may require DOC + DPF + SCR to meet Tier 4 or Euro VI requirements. A "Tier 4 Final" (T4F) certified engine will come equipped with all of these capabilities "built in" by the engine manufacturer. However not all applications require a certified T4F engine. Many T4F engines with SCR systems turn off the engine when low urea (aka Diesel Exhaust Fluid) levels occur – an unacceptable situation for some applications. There are many cases where it may be more appropriate to use a Tier 2 or Tier 3 engine coupled with a third party exhaust after-treatment and silencing system. For example in some cases, especially for large engines, the space requirements may not allow placement of the engine manufacturer's T4F solution, yet there may be a regulatory requirement to achieve certain CO, PM or NOx targets. Another example is international projects where there may be a desire to eliminate visible smoke and reduce NOx, but cost requirements may make it more attractive to use a Tier 2 or Tier 3 engine with a third party exhaust system. Another example is emergency standby engine/generators. Typically an engine used for emergency standby does not need to be Tier 4 certified. Often for these applications Tier 3 or Tier 2 engines are used. In some instances, especially for emergency standby engines in heavily populated areas there may be a requirement for NOx reduction

in addition to silencing. In these cases the engine will require an exhaust system that has both an SCR and silencing.

For natural gas engines used in on-site power, the situation may be somewhat different. Many natural gas engines operate in prime power mode. Often they are used as part of a Combined Heat and Power (CHP) system. Many of these engines require a combination of Oxidation Catalyst (similar to a DOC) to reduce CO and an SCR to reduce NOx. CHP applications typically also have heat recovery devices in the exhaust. These devices reduce the available back pressure - leaving less available back pressure for the emissions and silencing system.

Of course, both natural gas and diesel engines require silencing. The silencing requirements can vary depending on the site and its local regulatory requirements. Silencing requirements typically vary from a reduction of 20dBA to a high of 40dBA across a predefined set of octave bands.

As a result, there are many different combinations of silencing and emissions control that can make it difficult to select the right solution. For example an engineer must consider the engine out emissions and the local regulatory requirements before selecting a silencer and associated emissions solution. In addition if multiple components are required, such as a separate SCR, silencer, DOC and DPF the engineer has to allow enough space for the components and must ensure that the allowable pressure drop for the engine is met. This can create a challenge. For example Figure 1 shows a drawing for an SCR and a silencer for a 2MW engine. As can be seen in Figure 1, there are many expansion joints and a significant amount of piping that interconnects the devices. In addition a lot of space is required for both the silencer and the SCR.

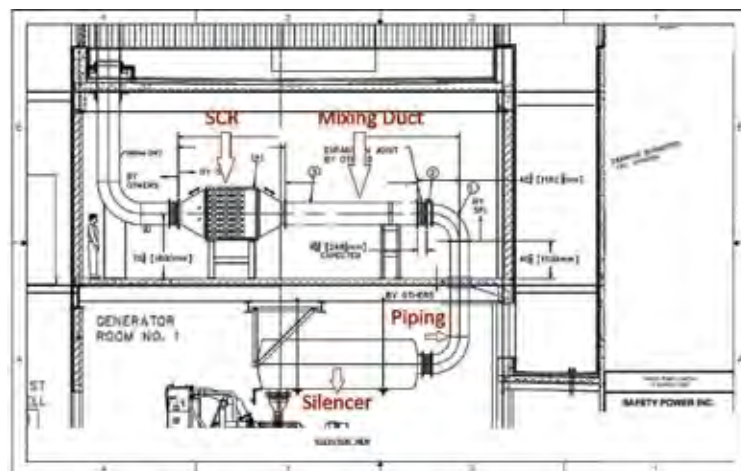


Figure 1: Example of Multiple Exhaust Devices

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A further complication for the engineer is how to package the emissions system with the engine. For example, is the emissions system going to be installed on top of an enclosure for outdoor application or will it be hung indoors from a ceiling above the engine? Is there enough space to mount the emission system horizontally or must it be mounted vertically? Will the exhaust enter the emissions system at a side wall or from the bottom? Dealing with these packaging constraints is a challenge which is especially important when there are tight space constraints.

An Integrated Approach to Emissions and Silencing

An ideal solution for engine manufacturers, dealers and packagers is the single cube approach discussed earlier. In this approach, a single device handles any combination of silencing, DOC, DPF and SCR. The ideal single cube solution would allow the engine exhaust to meet most regulatory requirements for noise and emissions anywhere in the world. In addition the ideal cube approach would allow highly flexible packaging of the device if there are space constraints.

In order to create a single cube solution, a product family is required to deal with the various emissions, silencing and allowable pressure drop required for the many available engines that could be used in on-site power applications. To ensure that the cube is as small as possible the entire product family should be pre-engineered with Computational Fluid Dynamics (CFD) software to ensure optimal flow with minimal pressure drop. An example of a typical CFD streamline plot for a single cube is shown in Figure 2.

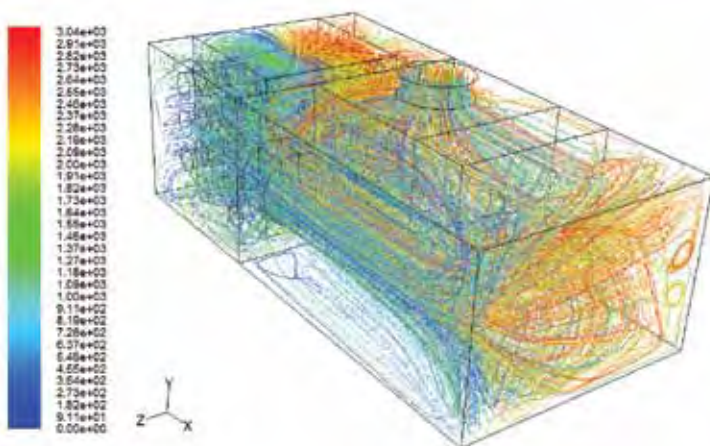


Figure 2: Example of CFD for A Single Cube Solution

By incorporating the mixing tube required for an SCR inside the cube, the overall size of the SCR portion is reduced. The cube approach also allows integration of any combination of silencing, DOC, DPF with the SCR. For example, with the cube approach, it is relatively easy to configure an SCR plus Oxidation Catalyst and silencer for a natural gas engine or to configure a full Tier 4 solution for a diesel. If the cube is pre-engineered then the pressure drop for the combined system is automatically determined when the system is configured. Several different silencer inserts are available to meet different acoustics requirements. Figure 3 shows the packaging of modules in a single cube equipped with all of the available modules.



Figure 3: Example of a Single Cube Solution

In addition to having a single cube solution to emissions and silencing, a significant number of interconnecting pipes and expansion joints can be avoided thereby reducing installation time and cost. The cube can be easily mounted on a genset enclosure or can be ceiling hung in a building application. Often it takes up not much more space than a conventional standalone silencer. The cube is suitable for indoor or outdoor mounting.

Future Directions for Emissions and Silencing

The integration of technology to deal with the reduction of engine emissions and silencing will continue to become an important aspect of exhaust systems for on-site power. In the future there will be continued enhancements of the overall exhaust system leading to smaller, less costly and more efficient solutions to the ever increasing demand to further reduce emissions from engines used for on-site power applications.

In Conclusion

Regulatory requirements and overall system cost will continue to drive exhaust systems that have tight integration between emissions control and silencing. Some engine manufacturers and system integrators will find a single cube solution to be a cost effective approach to meeting their customers' requirements. ■

About the Author

Bob Stelzer is the Chief Technical Officer for Safety Power, Inc. He is responsible for the engineering team that developed Safety Power's ecoCUBE™ family of products. The ecoCube™ product family has been configured for over 40 different engine types from most of the world's major engine manufacturers. Bob is a mechanical engineer with a Master's degree in Engineering. He can be reached at bob.stelzer@safetypower.ca





CHILLICOTHE METAL CO., INC.

Another in Our Series of EGSA Member Company Profiles

Chillicothe Metal Company is an on-site power system packager established in 1963 by Bob and Jan Fennell. Chillicothe Metal Company (or CMCO as often referred to) celebrates their 50th anniversary this year. The company is still privately held by the Fennell family and is centrally located to serve the United States from its location in Chillicothe, Illinois.

In 2003, the Fennell family acquired Pritchard Brown, another industry leader and recognized packager of on-site power generation equipment. The Pritchard Brown acquisition was a perfect fit, because both CMCO and PB are driven by the same values: product innovation, a one-source solution provider, strong engineering and testing capabilities, quality products, excellent customer service, a strong commitment to continuous improvement and competitive pricing.

Bob and Jan Fennell set CMCO on a strong growth path early on, by never saying “no” to their customers. Being the “true” Engineer that he is, Bob was always driven by the need to solve customer problems in a very high-quality manner.

The company today is managed by Rob Fennell, Bob and Jan’s son and Bob and Jan still maintain their offices, coming in 3 to 4 times a week. They continue to work on new ideas to make things better and more cost-effective.

That business philosophy over the last 50 years has resulted in a host of capabilities and experience that continue to serve the on-site power generation industry today. CMCO President, Rob Fennell, states, “Our culture is one that serves customers by solving their problems and consumer needs in a high quality, cost effective manner. My parents drove that set of business values every day for decades. It has served us well for half a century and we have no intention of changing it now. We will continue to grow on that very strong foundation. Strong economy or weak economy (and we have been through a number of business

Chillicothe Metal Co., Inc.

www.cmcosa.com

Chillicothe Metal Company, Inc. (CMCO) designs and manufactures custom sub-base fuel tanks, environmental enclosures and complete power packaging services for the on-site power generation industry. Their products serve many markets including health care facilities, water treatment plants, data centers, universities, military, oil & gas applications, commercial, mobile power and more.

Founded in 1963, Chillicothe Metal Company, Inc. has five decades of experience and over 40,000 on-site power generation projects placed in service around the world. CMCO is an established market leader in design, engineering, manufacturing, and validation testing.

cycles) we will not sacrifice our commitment to quality and customer satisfaction.”

CMCO’s is an on-site power system packager of UL listed sub-base fuel tanks, sound attenuated enclosures, weather tight enclosures, arctic rated enclosures, power modules, switchgear, fire suppression, trailers and many other ancillary items required to meet customer project needs in a comprehensive, one-stop shop manner.

CMCO is located on a 69 acre parcel about 2.5 hours south of Chicago. Having a lot of room in a rural area with minimal ambient noise allows the perfect environment for free field acoustical testing... and CMCO conducts a lot of testing! Electrical load bank and functional control testing are considered growth areas for CMCO, as that requirement is being specified on more projects than ever before. CMCO provides reactive load bank testing to 6MW on diesel fuel applications and 2.5MW reactive on natural gas applications. Load banks are isolated for free



field acoustic testing. Customers are even welcome to witness these tests. President Rob Fennell states, “if you claim to have the ability to design and manufacture a product that will meet a specified noise level, we believe you should also have the capability to test and validate the performance of your products as truly meeting that specification. We don’t take sound requirements lightly. Our engineers understand acoustics and we can validate our product before it leaves if and when requested.”

This all ties in with Chillicothe Metal’s mission statement to offer the highest value products and services in the Industry. They are a custom solutions supplier committed to meeting and/or exceeding their customers’ expectations. CMCO customers get signed off on projects quickly and paid by meeting their customers’ needs and expectations. It’s the golden rule at CMCO and that attitude has not changed in 5 decades.

CMCO serves markets worldwide. Although most work today is still based in the US, CMCO serves customers in Canada, South America and the Middle East. CMCO is working and marketing to grow their international business. Foreign markets are important, as opportunities are abundant in other non-traditional industries. The US economy, although improving, is still flat and price-sensitive. CMCO’s experience in dealing outside traditional US based markets is helping offset the effects of a depressed economy here in the US.

CMCO is an ISO 9001: 2008 registered company. Quality procedures and processes are taken seriously at CMCO. “We do not cut corners when it comes to quality” states Adam Durst, V.P. of Engineering. “We are well under our stated goal for ‘Cost

of Quality’ and continuously analyze operational data to make continuous improvement. Our customers do not expect field problems and we do everything within our power to eliminate them but if there ever is a field problem, we correct it quickly. The tangible costs of a field problem are bad enough. The intangible problem of an unhappy customer is another. We invest heavily on the front end of quality to eliminate or at least minimize field problems.”

And speaking of the economy, Bob Fennell; company founder states, “downturns are never easy or predictable. They tend to arrive rather quickly and without a lot of notice. We have lived through them before and we are living through this one. Hard working, creative employees and staying true to your values make the difference. Managing the growth of our business in a controlled manner is critical in this Industry. We will not fall into the trap of over-expansion and uncontrolled growth as so many others have. We understand that business is cyclical and that our customers need and want reliable business partners for the long term.

Yes; price is important, but you have to be able to support your customers today and in the future. Customers need to know that you will be there tomorrow. We are probably the Project Manager’s best friend! They know we will be there for them. Dedicated employees that see opportunity in change and challenging times also help us stay on track.”

CMCO has lived through enough down turns and now sees them as an opportunity to build for the next upturn. For example, since this “Great Recession” started, CMCO added to its capabilities. In 2009, they brought on the capability to manu-



*Chillicothe Metal
Company Founder,
Bob Fennell*



facture UL-2085 listed fuel tanks in-house. This helped greatly in reducing cost for customers and improving product quality. In 2010, they recognized a growing need for electrical load bank testing. CMCO purchased a 6MW reactive load bank with upgraded software. The new load bank allows CMCO to test ever-growing genset ratings, as well as provide paralleling tests. The most recent enhancement added to the CMCO offering is IBC Certification. CMCO spent a fair amount of time learning about this building code and what it means to our Industry. As Federal Emergency Management Agency (FEMA) was behind the development of the International Building Code (IBC) and all 50 states have now adopted some version of the code; CMCO doesn't see it going away. CMCO is now IBC Certified and publicly listed by Seismic Source International at www.seismic-source.com. Steve Stoyanac, National Sales & Marketing Manager and 2004 EGSA Past President states, "given all the confusion and misunderstanding regarding the IBC, we set out to offer our customers the most credible manner of meeting the requirements of this code. That's not easy when everything you manufacture is custom. We are now there and offer our customers a Certificate of Compliance, Engineering Analysis, and proper labeling as required by the code. There are several methods out there being used to claim IBC Certification, some more credible than others. CMCO now offers their customers the most credible manner of meeting all requirements of the IBC in a very cost effective manner and in doing so removed potential liability.

The EGSA Connection

CMCO became an EGSA Member in 1993 to keep abreast of industry opportunities and challenges, as well as the opportunity to network with customers, suppliers and even competitors.

Ever since, CMCO has had employees involved in various EGSA Committees, board positions, and one even serving as EGSA President! CMCO continues their involvement in EGSA today by serving the Educational Committee, Codes & Standards Surveillance Committee and Chairing the EGSA Sub-Committee responsible for revising the On-Site Power Generation Reference Book. CMCO attends every EGSA Convention, as well as both the Power-Gen and NFMT tradeshow as an exhibitor.

Brad Fennell, V.P. Sales and Steve Stoyanac serve as CMCO's primary representatives to EGSA. Brad just finished serving a 3 year term on the EGSA Board of Directors and is currently updating the "Fuel Systems" chapter for the 5th edition of the EGSA On-Site Power Reference Manual. Steve Stoyanac has served two terms on the EGSA Board and as President in 2004. He also chairs the EGSA On-Site Power reference manual revision committee responsible for updating the book to reflect current technologies. EGSA also provides an opportunity to give back to the industry that sustains all of us.

On EGSA, Steve Stoyanac states, "EGSA is the knowledge base of our Industry and there is no equivalent. In the on-site power generation industry, technology is constantly changing, codes and standards are changing, the business climate, challenges, opportunities, people; how do you stay on top of all that and in a timely manner? EGSA is the one comprehensive organization that gets it done. Honestly, I don't know how you can grow in this Industry and not be an active member of EGSA. The timely information, knowledge and networking that EGSA offers is critical if you want to stay ahead and compete successfully in this Industry." ■



Application for Membership

ELECTRICAL GENERATING SYSTEMS ASSOCIATION

1650 South Dixie Highway, Suite 400, Boca Raton, FL 33432 • 561-750-5575 • FAX 561-395-8557

E-Mail: e-mail@EGSA.org • World Wide Web: www.EGSA.org

Under the leadership of its Board of Directors and operating through its various committees and staff, EGSA strives to educate, provide networking opportunities and share relevant knowledge and trends with industry professionals including manufacturers, distributor/dealers, engineers, manufacturer representatives, contractor/integrators and others serving On-Site Power consumers.

1. Contact Information

Please type or print all information in upper and lower case (NOT ALL CAPS!)

Company _____
Address _____
City _____ State/Province _____
Zip/Postal Code _____ Country _____
Phone _____ FAX _____
Official Representative _____ Title _____
Representative's E-Mail _____ Company's Web Address _____
How did you hear about EGSA? ☐ Web site ☐ Powerline magazine ☐ Colleague ☐ POWER-GEN ☐ Other _____
Why are you joining EGSA? ☐ Certification Program ☐ CEU Program ☐ Power Schools ☐ Buying Guide Listing ☐ Other _____

2. Member Classification

Read the Membership classifications below and check the box that describes your firm's classification.

I. FULL MEMBERSHIP

- ☐ MF **Manufacturer Membership**
Any individual, sole proprietor, partnership or corporation seeking membership must apply for a Full Membership as a manufacturer if they meet one or more of the following criteria:
1. They manufacture prime movers for power generation.
 2. They manufacture generators or other power conversion devices producing electricity.
 3. They manufacture switchgear or electrical control devices.
 4. They manufacture or assemble generator sets, UPS systems, solar power, hydropower, geothermal, or any other power production or conversion system including related components or accessories for national or regional distribution.
 5. They are a wholly owned subsidiary of a firm that qualifies under rules one through four.
- ☐ DD **Distributor/Dealer Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a distributor or dealer for products listed under Manufacturer Membership may apply for Full Membership as a Distributor/Dealer. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ CI **Contractor/Integrator Membership**
Any individual, sole proprietor, partnership or corporation actively engaged as a Contractor or Equipment Integrator of products listed under Manufacturer Membership, not bound by brand, geographic territory or contractually obligated as a Distributor/Dealer of a specific product. These firms typically purchase products from a Distributor/Dealer, Manufacturer or Retailer, adding value through installation, product knowledge, relationships, unique services, etc., and then re-sell the resulting product to an end-user.
- ☐ MR **Manufacturer's Representative Membership**
Any individual, sole proprietor, partnership or corporation actively engaged in the representation of products listed under Manufacturer Membership may apply for Full Membership as a Manufacturer's Representative. If an organization qualifies under Manufacturer Membership, it is not qualified under this section.
- ☐ EM **Energy Management Company Membership**
Any individual, sole proprietor, partnership or corporation engaged in energy management, including Energy Service Companies (ESCOs), Independent Power Producers (IPPs), Integrators, Aggregators, and other similar enterprises may apply for Full Membership as an Energy Management Company.
- ☐ **Associate Full Membership (mark appropriate category at right)**
Any individual, sole proprietor, academic institution, student, partnership or corporation meeting the requirements of Associate Regular Membership may apply for Full Membership at their option to enjoy the privileges of Full Membership, including the rights to vote and to serve on EGSA's Board of Directors. Initiation fees and annual dues will be assessed at the existing non-manufacturer Full Member rates.

II. ASSOCIATE REGULAR MEMBERSHIP

- ☐ AA **Trade Publication Membership**
Any trade publication dealing with the electrical generating systems industry or its suppliers may apply for Associate Membership—Trade Publications.
- ☐ AB **Trade Association Membership**
Any trade association made up of individual or company members sharing a common interest in the electrical generating systems industry may apply for Associate Membership—Allied Associations.
- ☐ AC **Engineer Membership**
Any consulting or specifying engineer may apply for Associate Membership—Engineer. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AD **End-User Membership**
Any individual employee of a company who owns or operates electrical generating equipment and/or related switchgear or components, whose responsibility to his employer includes planning, design, installation, supervision, or service of such equipment may apply for Associate Membership—User. Membership may either be held in the employer's name or individual's name under this classification. Individuals whose employer qualify as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AE **Service Membership**
Any individual, organization or academic institution that offers services such as research, testing or repair to the electrical generating systems industry may apply for Associate Membership—Services. Membership may either be held in the individual's name or the organization's name under this classification. Individual companies whose employer or parent organization qualifies as a Full Member, as described in the Full Membership section, do not qualify for this category.
- ☐ AG **Educational Institution Membership**
Any postsecondary vocational-technical school or college offering on-site power generation-related instruction may apply for Associate Membership—Education Institution.
- ☐ AR **Retiree Membership**
Any individual who retires from a member company may apply for Associate Membership—Retired. This classification does not apply to any individual who is employed more than 20 hours per week.
- ☐ AF **Student Membership**
Any individual currently enrolled at an academic institution may apply for Associate Membership—Student.

Application for Membership – page 2

Dues Schedule (Use for Section 3)

| | Annual Dues | Initiation Fee | TOTAL |
|----------------------------------|---------------|----------------|--------|
| Manufacturer..... | \$870 | \$200 | \$1070 |
| Distributor/Dealer..... | \$300 | \$100 | \$400 |
| Contractor/Integrator..... | \$300 | \$100 | \$400 |
| Manufacturer's Rep..... | \$300 | \$100 | \$400 |
| Full Associate Member..... | \$300 | \$100 | \$400 |
| Energy Management Companies..... | \$210 | \$100 | \$310 |
| Regular Associate Member..... | \$210 | \$100 | \$310 |
| Retiree Member..... | Complimentary | \$0 | \$0 |
| Student Member..... | Complimentary | \$0 | \$0 |

NOTE: A FULL 12-MONTH DUES PAYMENT MUST BE RECEIVED WITH THIS APPLICATION. The Association's Membership Year is January 1 through December 31. Dues payments that extend beyond the first Membership Year will be applied to the second year's dues.

FULL PAYMENT MUST BE RECEIVED WITH APPLICATION.

3. Membership Dues (Please fill in the appropriate TOTAL amount from the above dues schedule.)

Membership Dues \$ _____
Membership Plaque (optional)** \$ 49.95**
On-Site Power Reference Book (optional)** \$ 125.00**
Florida Residents: Add 6% Sales Tax to ** items \$ _____
Continental US Residents add \$5 shipping/handling to ** items. \$ _____
Non Continental US Residents should call EGSA
Headquarters for shipping charges for ** items. **TOTAL** \$ _____

4. Payment Method (Payable in US\$ drawn on U.S. bank, U.S. Money Order, or American Express)

☐ Check # _____ Amount Due \$ _____
☐ Money Order
☐ Mastercard ☐ Visa ☐ American Express
Card # _____ Exp. Date _____
Signature: _____
Print Name: _____

5. Products/Services Please describe the nature of your business (50 words or less, NOT ALL CAPS). If you are a Manufacturer's Representative or Distributor/Dealer, please indicate which manufacturers you represent and/or distribute for; if you are a student, please provide the name and location of your school, your major and your anticipated graduation date:

Do you buy AND sell equipment? ☐ Yes ☐ No

Do you manufacture packaged equipment? ☐ Yes ☐ No

Available Codes:

| | | |
|---|---|---|
| 01 ---Batteries/Battery Chargers | 09 ---Generator Laminations | 19 ---Silencers/Exhaust Systems/Noise Abatement |
| 02 ---Control/Annunciator Systems | 10 ---Generator Sets | 20 ---Solenoids |
| 29 ---Education | 11 ---Generators/Alternators | 21 ---Switchgear and Transfer Switches (Automatic or Manual), Bypass Isolation Switches, and/or Switchgear Panels |
| 30 ---Emission Control Equipment | 12 ---Governors | 22 ---Trailers, Generator Set |
| 04 ---Enclosures, Generator Set | 13 ---Heat Recovery Systems | 23 ---Transformers |
| 05 ---Engines, Diesel or Gas | 14 ---Instruments and controls, including meters, gauges, relays, contactors, or switches | 24 ---Uninterruptible Power Supplies |
| 06 ---Engines, Gas Turbine | 15 ---Load Banks | 25 ---Vibration Isolators |
| 07 ---Engine Starters/Starting Aids | 16 ---Motor Generator Sets | 26 ---Voltage Regulators |
| 08 ---Filters, Lube Oil, Fuel or Air | 17 ---Radiator/Heat Exchangers | 27 ---Wiring Devices or Receptacles |
| 28 ---Fuel Cells | 18 ---Relays, Protective or Synchronizing | |
| 03 ---Fuel Tanks and Fuel Storage Systems | | |

Enter codes here:

Products sold: _____

Products rented: _____

Products serviced: _____

6. Sponsor(s): A "Sponsor" is an EGSA Member who interested you in filling out this application. It is not mandatory that you have a sponsor for the Board to act favorably on this application; however, if a Member recommended that you consider membership, we request that individual's name and company name for our records.

Sponsor Name _____ Company Name _____

7. Official Representative's Authorization

Signature _____ Date _____

NEW EGSA MEMBERS

MF=Manufacturer DD=Distributor/Dealer CI=Contractor/Integrator MR=Manufacturers Rep
EM=Energy Management Co. AA=Trade Publication AB=Trade Association AC=Engineer
AD=End-User AE=Service AG=Educational Institution AR=Retiree AF=Student

AC/DC Industrial Electric, LLC. DD
Vantic, CT
Charlie Carroll
Mainly Generac residential/commercial/industrial dealer who also reconditions, services and repairs all generator make and model. We also provide rental generators.

Bell Power Systems, LLC. DD
Essex, CT
Charlie Gotta, Package Product Manager
John Deere and Yanmar Dist.

Cooper USA DD
Menomonee Falls, WI
Phil Knoebel, VP of Sales
We represent Cooper Corp. Engine & Genset Manufacturer - Component Supplier since 1940. Entering US Market - will be Cooper USA.

Cummins Crosspoint, LLC. DD
Indianapolis, IN
Leanne Dimon, Organization Growth Manager
Distributor of Cummins/Onan products, providing sales, service and rentals of generator sets from 3kW to 4MW. Products include transfer switches, switchgear and all related equipment.

Cummins Power South DD
Atlanta, GA
David Hagewood
Cummins Power South is the official distributor for all Cummins engines, generators and parts & service for GA, FL, Chattanooga, TN and certain areas of the Caribbean.

Direct Wire & Cable MF
Denver, PA
Adam Strouse, Marketing Manager
We sell power cable to the power, generator, and rental markets. We have five warehouses stocked with 4/0 power cable assemblies and bulk cable. Additionally, we are able to assemble any type of electrical cord you may need.

Elkhart Plastics. MF
South Bend, IN
Todd Outman, VP Sales & Marketing
Elkhart Plastics is a full service rotational molder with five US manufacturing facilities in-house engineering design and support. Manufactured products include DEF tanks and diesel fuel tanks.

Emerald Resource Group MR
Garden Valley, CA
Richard Neet, Principal
Manufacturers Rep for: Innovation Energies, Josephson Manufacturing, Engine & Compressor Accessories, Rocore Industries, Cain Industries, Mosebach Manufacturing, Storage Battery Systems, Temptec.

FieldBoss AE
Toronto, ON Canada
Jonathan Taub, President
FieldBoss is a field service automation software developed for the generator service industry. FieldBoss is built on Microsoft Dynamics CRM, utilizing familiar Microsoft programs and works with you to run your whole business on one system. The mobile solution that connects the office to your technicians anytime, anywhere.

FloScan Instrument Co, Inc. MF
Seattle, WA
Chuck Wurster, President
Fuel flowmeters and related readout instruments and software for diesel engines from 30HP to 6000HP. FloNET hardware/software systems for use with CANBUS network backbone. Includes custom spreadsheet report generation. Team Viewer software for remote access to real time flow data.

FPT North America MF
Burr Ridge, IL
Carrie-Ann Flank, GM
Manufacturer of fuel efficient diesel engines and g-drive packages 2.2 - 20 litres for use in power generation. Emissionized to Tier 4 as well as non-emissionized options in 50 or 60hz 1500/1800 rpm. Our unique Tier 4 Final Solution of SCR ONLY provides lowest cost of operation.

Genpower Corp. DD
Marlboro, NJ
Tom Asimopoulos, President
Sales and service of standby emergency generators.

Holland Pump DD
West Palm Beach, FL
Win Blodgett, President
35 year old pump rental company w/8 locations selling, renting and servicing diesel/engine driven pump packages including suction lift pumps, T&T pumps.

Kato Cable. MF
Mankato, MN
Eric Else, President/Owner
Kato Cable is a full service cable assembly facility dedicated to producing quality cable assemblies, wire harnesses, and electro-mechanical assemblies. Our capabilities include 4/0 AWG heavy cable to 32 AWG discrete wire, multiconductor cables, panel assemblies, and large wire harnesses. UL Recognized and ISO 9001 Certified.

Mersino Dewatering, Inc. DD
Davison, MI
Todd Johnston, National Manager - Power Products
Mersino is a proud distributor of Global PRIME Power products sales, rentals and service.

On-Site Equipment Maintenance, LLC. AE
Edison, NJ
Al Leo, VP
Valve repair, turbine repair, pump repair, gear box repair, welding services, field services.

Orange County Thermal Industries, Inc. MF
Anaheim, CA
Anna Dong, Operations & Productions Manager
Our priority is to provide customers with customized quality thermal insulation and acoustical attenuation. Insulation will decrease accidents / injury as well as decrease our carbon imprint.

Paragon Search & Strategies, LLC. AE
East Brunswick, NJ
Barrett Avey, Partner
Paragon is a Recruitment Service targeting top talent in the areas of Service, Technicians, Sales Reps, Engineers, Product & Project Managers & all levels of Management. We have 24 yrs of industrial recruiting & are very well connected within the Industry

Pike Research AE
Boulder, CO
Dexter Gauntlett, Research Analyst
We are a research firm that covers all distributed generation, including generators, microgrids, storage and renewables.

Powerhouse Systems, LLC. DD
Medina, MN
Jerry Ricke, Owner
Powerhouse sells both new & pre-owned generator sets primarily into the data center industry. We refurbish in house with enclosure manufacturing, sound attenuation & painting. Powerhouse offers turn key solutions/installations with our in house electricians & service technicians. Powerhouse offers de-installation services throughout the USA. PHS also sells other data center facility products such as UPS & Air Conditioners. Baldor, AKSA, Winco.

Renosa Co. MR
Dayton, OR
David Hammond, President
Manufacturer's Representative of products relating to the Emergency Power Market. Thomson Technology, Robinson, Philips & Temro, Miratech, U.S. Radiator, SENS, Cowl, VMC.

Safety Power Inc. MF
Mississauga, ON, Canada
Robert Desnoyers, President & CEO
Safety Power is a global innovator of emission control products for large scale diesel and natural gas on-site power systems. Safety Power engineers, manufactures and commissions SCR, DOC & DPF emission control solutions.

Matthew King AF
Airdrie, AB, Canada

Eric Riungu. AF
Peabody, MA

EGSA JOB BANK

North America

Outside Sales - Genset Market

Hotstart Inc

Location: Spokane/WA/USA

Hotstart is looking for an outside sales professional to serve gen set packagers and gen set service companies in the US.

For a full job description please see: <http://www.hotstart.com/home/about-us/employment/>

To apply: Email resume to careers@hotstart.com

Application Deadline: 2013-03-31

USA Midwest

Generator Service Technician

Allied Generators

Location: St Paul, MN

Allied Generators is an independent generator dealer. We sell, install, and service multiple brands of generators and transfer switches. We are located in St Paul, MN. Our service area is Minnesota and Western Wisconsin. We are seeking a generator service technician to work on a variety of natural gas and diesel applications. We prefer someone with diesel engine, and controller troubleshooting experience. Must be able to work independently and have customer communication skills.

EGSA Certified Technicians Preferred

To apply: roger@alliedgenerators.com

EGSA Job Bank Guidelines

EGSA will advertise (free of charge) EGSA Member company job openings in the Job Bank. Free use of the Job Bank is strictly limited to companies advertising for positions available within their own firms. Companies who are not members of EGSA and third-party employment service firms who service our industry may utilize the Job Bank for a \$300 fee. Blind box ads using the EGSA Job Bank address are available upon request; company logos may be included for an additional fee. EGSA reserves the right to refuse any advertisement it deems inappropriate to the publication. To post an EGSA Job Bank ad (limited to approximately 50 words) please visit www.EGSA.org/Careers.aspx.

Account Manager-Industrial Sales

Cummins NPower LLC

Location: Chicago, Illinois

Sell Cummins Products and service capabilities in target markets to meet the sales objectives for the territory. Identify, develop, and maintain strong customer relationships advancing brand loyalty and meeting customer needs.

Please go to our website to learn more and to apply! <http://www.cumminsnpower.com>

To apply: www.cumminsnpower.com

Application Engineer

Young Touchstone

Location: Oak Creek, WI

Young Touchstone, a Wabtec company, the leader in the design and manufacturing of heavy duty radiators and charge-air-coolers, has an immediate opening for an Application Engineer.

We are seeking a motivated team player with great interpersonal skills who will provide technical and sales support to our Sales Representatives and their customers. A Bachelor of Science in Engineering is required.

To apply: Send resume to adeakins@wabtec.com

USA National

Seeking to Advance Career in Power Gen Industry

Location: USA

Power Gen firm that requires an experienced manager.

Graduated with Bachelor's degree & worked at basically every position in Distribution.

GM & Managing Partner since 1994. Extensive knowledge of Distribution.

Committed to growth. Proficient on computer. Intuitively know solutions to challenges.

Knowledgeable of P&L and Balance sheet. Create atmosphere of loyalty instead of fear.

Please contact me directly at (352)895-3500 or email ezstevep@gmail.com

Resume available upon request. Steve Parker

To inquire: Please contact me directly at (352)895-3500 or email ezstevep@gmail.com.

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GLOBAL GENERATOR SETS.COM

USA National

Application Service Engineer

ComAp LLC

Location: Roscoe, IL, USA

ComAp LLC is actively seeking qualified Application Service Engineers to support sales and service through expert customer technical support utilizing presentations, training, design, installation, and commissioning. Candidates should possess:

-BS Degree in Mechanical or Electrical Engineering or 5 years of experience

-PLC or Microprocessor based controls, software, and logic

-Knowledge of reciprocating engines, generators, pumps, compressors, or other industrial equipment

- SolidWorks or AutoCAD

- Read and create wiring diagrams, schematics, and mechanical drawings

To apply: send resume to HR@comapllc.com

Technical Support Engineer

ComAp LLC

Location: Roscoe, IL, USA

ComAp LLC is actively seeking qualified Technical Support Engineers to support sales and service through expert customer technical support utilizing presentations, training, installation, and commissioning.

Candidates should possess:

-AS Degree in Mechanical or Electrical Engineering or 2-5 years of experience

- PLC or Microprocessor based controls, software, and logic

-Knowledge of reciprocating engines, generators, pumps, compressors, or other industrial equipment

-Read and create wiring diagrams, schematics, and mechanical drawings

To apply: Send resume to HR@comapllc.com

USA Midwest

Sales Person

Midwest based Manufacture's Representative Firm has an immediate opening for an experienced and motivated salesperson. Experience selling electrical and mechanical products the On Site Power Generation Market strongly desired and to the compressor or large engine market beneficial. Competitive base salary, commission, vacation and health.

To apply: Please respond to J.Kellough@EGSA.org.

USA Northeast

Aftermarket Sales Manager

Kinsley Power Systems

Location: Concord, NH

Kinsley is looking for an Aftermarket Sales Manager that will be responsible for developing, growing and managing the Company's emergency power generator service & maintenance sales business throughout the Vermont, New Hampshire, Southern Maine and Northern Massachusetts markets.

To apply: Interested candidates should forward their resume to lbarnes@kinsley-group.com.

Industrial Sales Engineer

Kinsley Power Systems

Location: Syracuse/Rochester, NY

Kinsley is looking for an experienced Industrial Sales Engineer in the Syracuse/Rochester, NY area that will sell industrial applications from 20kW to 2800kW, including related equipment (transfer switches, switchgear, etc). Experience working with engineers, electrical contractors, end-users and OEMs, required.

To apply: Interested candidates should forward their resume to lbarnes@kinsley-group.com.

USA Southeast

Sales/Technical Support Representative

FGW Latin America; Caribbean

Location: Miramar, FL

FGW Latin America & Caribbean, located in Miramar, FL has an immediate opening for a Sales/ Technical Support Representative handling direct-to-customer sales and product support (mainly by phone) to our customers throughout Latin America & the Caribbean. A minimum of 2-5 years experience in the Power Generation Industry is required. Previous field experience is preferred. Applicant must speak English & Spanish. Competitive salary, performance bonus, healthcare and other benefits provided. All resume submissions treated confidentially.

To apply: email resume to hry2008@fgwilsonmiami.com

Generator Service Technicians

Genset Services Inc.

Location: Pompano Beach Florida

We are growing! Genset Services, Inc. is seeking qualified generator technicians for our Central and South Florida branches. Working knowledge of Diesel and Gaseous engine driven generator sets is required including service/maintenance, troubleshooting/ repair of AC and DC electrical and control systems as well as strong computer skills. Ideal candidate will have neat appearance and clean driving record. We offer a competitive compensation package including company vehicle, health insurance, vacation and an investment plan.

EGSA Certified Technicians Preferred

To apply: Please forward your resume with cover letter and salary requirements to keith@gensetservices.com

Emergency Power Generator Sales Position

Genset Services Inc.

Location: Pompano Beach, Florida

Headquartered in Pompano Beach, Florida, Genset Services, Inc. the top tier industrial distributor for Generac generators in South Florida has an immediate opening for an experienced outside salesperson. Ideal candidates will have a minimum of 3yrs of success selling industrial emergency power equipment in the Florida market. We offer a competitive compensation package that includes a base salary plus commission, car allowance, health insurance, vacation and investment plan.

To apply: Please forward your resume with cover letter and salary requirements to matt@gensetservices.com

Inside Sales/Estimator

Nixon Power Services

Location: Charlotte, NC, USA

Gather RFQ's Estimate and prepare proposals Support customers internal and external Bachelor's degree from accredited four-year college or university; or two to five years related experience; or equivalent combination of education and experience Past project management or estimating experience with a licensed electrical contractor considered Switchgear experience desired Excellent organization and communication skills Attention to detail Proficient with MS Office Ability to read and interpret electrical blueprints Electrical systems and generators knowledge

To apply: resumes@nixonpower.com

Sales Project Engineer

Nixon Power Services

Location: Lawrenceville, GA, USA

Gather RFQ's Estimate and prepare proposals Support customers internal and external Bachelor's degree from accredited four-year college or university; or two to five years related experience; or equivalent combination of education and experience Project management or estimating experience with electrical contractor Switchgear experience desired Excellent organization skills Attention to detail Excellent verbal and written communication skills Proficient with MS Office Ability to read and interpret electrical blueprints Electrical systems and generators knowledge

To apply: resumes@nixonpower.com

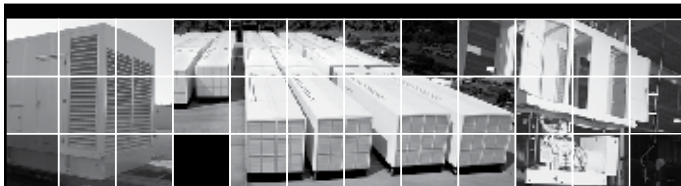
Aftermarket Customer Service Manager

Nixon Power Services

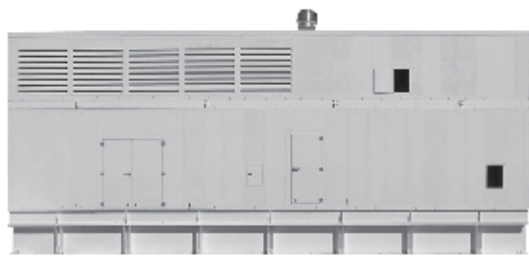
Location: Charlotte, NC, USA

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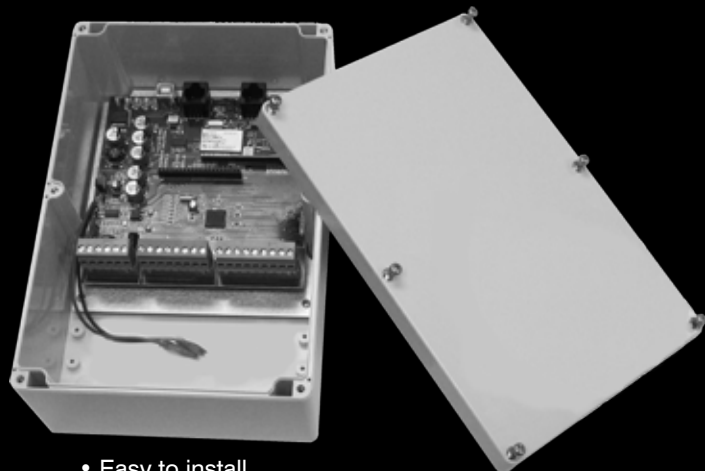
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Critical Protection: Data Center

Dedicated Standby Power for 12 Separate Data Center Suites

A hundred years ago, no one would have ever imagined that the modern world be propped up by a digital network comprised of bits and bytes — a world where the most sensitive data is exchanged globally, shared securely on personal devices and stored virtually in an esoteric repository known as “the cloud”. In 1912, when the now historic Chicago landmark at 350 E. Cermak Road was constructed to be a fortress built to provide printing services, such concepts would have been unimaginable.

Today, the location represents the achievement of the once incomprehensible. Home to one of the world’s largest data center facilities, this icon of the industrial age has been transformed into a cornerstone of the 21st century digital economy. The 1.1 million sq ft facility is owned by Digital Realty, a leading global provider of data center solutions. Originally developed by the R.R. Donnelley Co. to house the printing presses for the Yellow Pages and Sears Catalog, the site was converted to telecom use in 1999, briefly changed ownership soon after and was purchased by Digital Realty in May 2005.

Under Digital Realty’s ownership, 350 E. Cermak Road has become one of the world’s largest carrier hotels and the nerve center for Chicago’s commodity markets. The facility’s robust architecture makes it an ideal location for Digital Realty to utilize its Turn-KeyFlex technology, one that allows customers to lease fully equipped electrical and mechanical data centers that are move-in-ready. In the span of a few short years, 350 E. Cermak Road has become home to data centers for financial firms drawn by the confluence of peering and connectivity providers among Cermak’s many tenants.

The building’s original design enabled the storage of huge reams of newsprint on the upper floors. Its 14-foot ceilings can support weight loads of 250 pounds per sq ft, and a series of 21 vertical shafts allowed materials to be lowered to the printing

press floor. Today, the shafts now serve as risers for fiber and power cabling, and the floor loads can store heavy equipment, such as transformers, on upper floors. Rounding out the building’s industrial strength infrastructure, four fiber vaults and three electric power feeds serve up more than 100 megawatts of power throughout the facility.



Digital Realty, 350 E. Cermak Rd., Chicago, IL

Where: Fourth and eighth floors of 350 E. Cermak Road, Chicago, Illinois, home of one of the world’s largest carrier hotels

What: Twelve 2 MW DQKAB generator sets, one per each data center suite and one redundant generator on each floor; two medium voltage paralleling systems with PowerCommand® master controls and transfer switches

Purpose: Dedicated standby power for 12 separate data center suites

Primary Choice Factors: Speed to delivery, 99.999 percent uptime reliability, cost-competitiveness, medium voltage paralleling switchgear architecture, exceptional service and support

Critical Protection: Data Center
Data center stronghold selects Cummins Power Generation for standby power

Backup Power Equal to the Building’s Enormous Architectural Backbone

When preparing the facility for data center occupancy, Digital Realty sought to maintain a degree of redundancy commensurate with the facility’s architectural backbone. Based on the company’s Turn-Key Flex solution — providing customers a move-in-ready data center — Digital Realty began preparing for occupancy soon after its acquisition of 350 E. Cermak Road.

One of its early projects was the conversion of the building’s fourth floor into six individual data center suites. Construction on the 150 thousand sq. ft. fourth floor took place between 2007 and 2008 and transformed the space into discreet suites, with security, power and infrastructural components dedicated

to each. Early in the design and construction process, Digital Realty tapped Cummins Power Generation to provide the emergency standby power system for its data center customers.

Once construction of the fourth floor was completed in 2008, Digital Realty was eager to lease the available space. Not surprisingly, customers were lining up to take advantage of the facility’s superior infrastructure and strategic proximity to multiple fiber networks. Speed to delivery is a hallmark of a Digital Realty data center, and the company called on Cummins to respond in kind to provide emergency standby power generator sets on a tight deadline.

Chuck Grosbier, Operations Manager for Digital Realty at the Cermak location, said that Cummins’ responsiveness and exceptional service were evident from the start.

CASE STUDY

"Cummins' service and product performance helped us establish a solid relationship with them that we've relied on ever since," said Grosbier.

Cummins Power Generation supplied five 2 MW generators configured on a radial bus system to

provide 10 MW of backup power to the fourth floor of 350 E. Cermak Road, with a sixth 2 MW generator reserved for (N+1) redundant capacity. Using medium voltage paralleling switchgear and DMC 300 digital master controls, this architecture allowed Digital Realty to set up the six generators to support the floor on a single bus system, delivering 1,350 kW of emergency standby power per suite.

Because each Cummins generator has on-board paralleling capability built into its own control panel, it can operate as a separate entity to the master controls. Grosbier said that the predictability of this type of distributed paralleling switchgear is critical to Digital Realty's redundant offering.



Twelve 2 MW diesel generator sets were lifted by crane and maneuvered into the docking bay.



The installation includes two medium voltage paralleling systems with DMC 300 master controls.

Photo courtesy of electrical contractor Kelso-Burnett Company

"The on-board controls ensure that even if the master controls go down, the generators will still stay parallel and provide the necessary

backup," said Grosbier. "In the world we live in, we can't have one piece of equipment that can take anything down. With the availability of the on-board controls, it eliminates that single point of failure for us," he added.

Grosbier's team relied on the human machine interface (HMI) of Cummins' master controls, giving them simple access to quickly configure the system as tenants are added to the bus. "The HMI allowed us to easily scale the system and load add as needed, especially as new ten-

ants came onboard one by one. The configurability of the bus through the master controls was a great benefit to us.

"The combination of Cummins' service and generator performance is a critical part of Digital Realty's Turn-Key Flex solution," added Grosbier. "It gives our customers peace of mind knowing that reliable backup power and service is part of the package," he said.

Immediately following the design and construction of the fourth floor, Digital Realty repeated the conversion process on the eighth floor. Like the fourth floor, Digital Realty deployed the same Cummins generators and paralleling switchgear configuration there. The building continues to be prime real estate for a data center location and is currently at capacity with 100 percent occupancy. ■



Each data center suite has N+1 emergency power supplied by Cummins 2 MW generator sets. Photo courtesy of electrical contractor Kelso-Burnett Company

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Cat® Entertainment Services Names New National Operations Manager



Cat Entertainment Services (CES) is pleased to announce that Assistant Vice President Mike Hone has been appointed National Operations Manager.

In his new position as CES National Operations Manager, Mike Hone will assist with day-to-day operations and will be responsible for equipment inventory at CES locations, new product development and equipment purchasing, based in Orlando, FL.

"Along with our five U.S. Regional Managers, Mike will have responsibility across all North American locations to support our sales and operations activities," said Phil Wessels, Vice President and General Manager of Cat Entertainment Services. "We look forward to continued growth and exciting opportunities we are pursuing both domestically and internationally."

Visit www.es-cat.com more information. ■

ENER-G Rudox Inc. - a New Force in American Cogeneration

Global cogeneration specialist ENER-G has joined forces with Rudox Engine & Equipment Company to design, develop, manufacture and install Combined Heat and Power (CHP) systems from Rudox's production facility in Carlstadt, NJ.

ENER-G group has invested in a 75% holding in Rudox, with existing Rudox owners, the Goodman family, retaining a 25% stake in the new ENER-G Rudox Inc.

Chris Hayton, new Chief Executive of ENER-G Rudox Inc, said: "This union between clean technology companies ENER-G and Rudox brings together a collective 90 years of market leadership in cogeneration and provides a strong and solid platform for growth. With Rudox's engineering and manufacturing capabilities and extensive network of service engineers, we can deliver and fund combined cooling, heat and power solutions to an American market that is seeking to save money on energy, increase the security of utility supply to its hospitals, schools & businesses, whilst improving the green performance of its buildings & communities."

Ryan Goodman, President of Cogeneration for ENER-G Rudox Inc, said: "We

are proud to join together with ENER-G, which is a European market leader in cogeneration. Our integrated product range, which will be manufactured by our experienced team in New Jersey, will provide the market with a wide choice of advanced cogeneration solutions from 70kW to 10MW. This investment gives us the capability to accelerate expansion and enables fully financed energy solutions, so customers have the option to pay as they save, without making any capital investment in energy saving technology."

ENER-G has been operational in the USA since 2011 and has recently commissioned a 2,454 MWh combined cooling, heat and power (CCHP) system at St. Peter's University, New Jersey. This is part of a \$6.3 million energy services contract, funded mainly by ENER-G - involving a strategic upgrade of heating, ventilation and air conditioning infrastructure, the installation of a solar photovoltaic system and new building energy management technology.

ENER-G and Rudox have a combined turnover approaching \$200 million and a global portfolio of 545MW operational cogeneration systems. In total, this CHP capacity achieves annual carbon dioxide savings of 341,232 tons. This equates to the environmental benefit of carbon sequestered by 253,738 acres of pine forest.

ENER-G Rudox will continue to provide CHP packaged products and custom cogeneration projects on an EPC (engineer, procure & construct) basis. Fully financed cogeneration systems will be available, with provision to deliver a complete energy services package - releasing substantial, guaranteed customer savings through energy efficiency and renewable energy generation.

For more information visit www.energ-group.com and www.rudox.com. ■

Kelly Generator & Equipment, Inc. Opens Two New Locations

Kelly Generator & Equipment, Inc. (KGE), the factory-authorized dealer for Generac Power Systems in the Mid Atlantic since 1992, recently announced its expansion into Western Pennsylvania with an office in Butler, PA and another location opening in Clarksburg, WV.

As a complete power generation provider, KGE distinguishes itself, as a company

that is uniquely qualified to provide its customers with all their power generation needs from inception to installation and throughout the life of the equipment. Both new branches will offer new unit sales, service and parts, rental generators from 20kW to 3MW and factory authorized service training.

KGE recently celebrated its 20-year anniversary as a power generator distributor recognized for its quality of service and the reliability of its generators. KGE has a 28,000 square foot headquarters in Owings, MD.

Visit www.kge.com more information. ■

Cat® Rental Power Provides Strong, Coordinated Response After Hurricane Sandy

On October 29, 2012, Hurricane Sandy's storm surge reached New York City flooding streets, tunnels, subway lines and causing massive power outages throughout the city.

Cat dealers across the country sent equipment, personnel and other resources to help the affected areas. The Caterpillar Electric Power Division team helped coordinate the response. "It was important to everyone at Caterpillar that we respond quickly to Hurricane Sandy," said Bill Rohner, Vice President of Caterpillar Electric Power Division. "The response from our Cat dealers has been nothing short of phenomenal. The coordination and teamwork displayed is a testament to the professionalism and quality of the Cat Dealer Network. We're glad that we've been able to play a role in the recovery efforts."

After the storm hit, more than 1,400 generator sets — creating an astounding 1.1 GW of power — were deployed directly to hundreds of customers, including gas stations, hospitals, supermarkets and commercial and industrial facilities.

For one Caterpillar customer, NYSE Euronext, the back-up power of Cat generator sets allowed them to open the markets and run the NYSE Trading Floor for three days. "Your Cat generators enabled us to open the markets while the entire area around us was completely without power. I have tremendous appreciation for the quality and power of Cat products, and we are extremely proud to use Cat generators," said Duncan Niederauer of the Chief Executive Officer of NYSE Euronext. "The NYSE runs on Cat!"

In addition to the generator sets, dozens of transformers and fuels tanks, 2.5 miles of power cable and hundreds of light towers, pumps and heaters were also sent into the field. Twenty-six North American dealers — including dealers as far as away as California and Washington — responded directly to customer demand or sent equipment and personnel in support of the recovery effort.

Visit www.cat.com for more information. ■

Ring Power Corporation Announces New Officers

Ring Power Corporation Chairman and President Randal L. Ringhaver and the Board of Directors are pleased to announce several new officer appointments.



Brian Cholmondeley has been named Vice President — Cat Rental Store East Coast Sales Manager and Jerry Burford has been named Vice President — Cat Rental Store West Coast Sales Manager.

Cholmondeley joined Ring Power in 1994 and most recently served as AVP — Cat Rental Store East Coast Sales Manager. Burford, a Navy Veteran, has been with Ring Power since 2000 and most recently served as AVP — Cat Rental Store West Coast Sales Manager.

Ryan Stallings was appointed Assistant Vice President, Challenger Sales Manager. Stallings began his career as a Cat Rental Store Sales Account Manager in 2005.



Mike Beauregard, newly appointed as Assistant Vice President, Ring Power Utility Equipment Sales Manager; has previously worked as Utility Equipment Sales Account Manager and Cat

Rental Store account manager.

Keith Summerlin has been elected Assistant Vice President, Crane Used Equipment Sales Manager. Summerlin has previous experience as Cranes Sales Account Manager and Cat Rental Store Account Manager.



Shelley Minzenberg was appointed Assistant Vice President, Human Resources Manager. With more than 25 years working in the Payroll and Human Resources related positions, Minzenberg's new responsibilities will include Health and Wellness initiatives.

For a full list of company officers, visit <https://intranet.ringpower.com/Documents/General/OfficersOwners.pdf>. ■

Universal AET to Create Center of Excellence Within Beloit, WI Facility

Universal Acoustic & Emission Technologies is bringing together engineers, designers, business staff and manufacturing specialists under one roof to create a dedicated team for its new Center of Excellence.

Universal AET's integrated Center of Excellence will be housed within its Beloit production facility to bring those who work in the conceptual stages closer to the manufacturing team, resulting in improved communication and design," said Dick Strojinc, Universal AET's Senior Vice President of Global Operations.

"We are excited to announce the next phase in our Beloit facility," Strojinc said. "A number of employees from our engineering team have physically transferred to Beloit from our Stoughton, WI, headquarters and are working from that facility on a daily basis. The Center of Excellence will streamline the process from concept to build, resulting in products of exceptional quality as we work toward becoming the premier solutions provider in our industry."

The Center of Excellence will initially focus on optimizing emissions products for stationary engine applications, a rapidly growing segment of Universal AET's sales. The new center also will help staff manage inventory and monitor the demand for increased output," Strojinc said.

In addition to engineers, the Center of Excellence team positions include design and drafting, process development, business development and raw materials coordination. All will work with the existing production staff already in place in Beloit. More positions will be added over the course of the year.

The Center of Excellence is a component of Universal AET's plan to expand its facility in the Beloit Ironworks complex, increasing capacity by 40,000 square feet and adding up to 100 jobs in the coming year, as was announced in December.

Visit www.universalaet.com for more information. ■

Employee Announcements - Kelly Generator & Equipment, Inc.



Ron Hartzel has joined Kelly Generator & Equipment of PA & WV, Inc., as Branch Manager. Prior to joining KGE, he had over 18 years of experience with

Eaton in various Engineering and Management assignments. His primary focus was on MV Switchgear, LV and MV Transfer Switches and Molded Case Circuit Breakers. Prior to Eaton, Ron worked for New England Electric in Westboro, MA for 8 years as a substation engineer, project engineer for the Distributed Control System replacement on the largest unit (690MW) in the system and finally as a program manager for a major transmission substation complex upgrade. Ron graduated from Northeastern University in 1994 with a MS in Electrical Engineering and is an active senior member of IEEE and served as the President of the Electrical Generating Systems Association (EGSA) in 2010.

Mel Goldsmith is the new Director of Product Support for Kelly Generator & Equipment, Inc. Mel has over 30 years of experience in sales and operations with Ingersoll Rand, and distributors of MTU, Detroit Diesel, Allison, Freightliner and Caterpillar products. Mel holds a MBA from Johns Hopkins University and a Masters Degree from Loyola College, Baltimore.



Visit www.kge.com more information. ■



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